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HARVARD MEDICAL ALUMNI BULLETIN

VOL. 38

WINTER 1964

NO. 3

The Cover: Seven years ago a Harvard orthoped and his associates began the mountainous job, literally and numerically, of treating the world's largest ski area, Mt. Snow, Vt. Since then, these physicians have virtually transplanted the Harvard Medical triad, patient care, teaching and research, onto the slopes. The cover photograph of a Mt. Snow ski patrolman was taken by Scope Associates of New York.

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Advertising: Milton C. Paige, Jr., 8 Fenway

Boston 15, Mass., CO 6-7510

LETTERS

A Matter of Taste

To the Editor:

This is my initial letter to an editor.

I was wondering what the point of the remarks of the young Harvard doctor-to-be concerning "Medicare" was supposed to be. I found his treatise superficial, uninformative, and not humorous.

I would not prolong your work day by having you reply, unless this strikes a responsive chord.

Usually I thoroughly enjoy the outstanding products of your efforts.

LOGAN O. JONES '43A
Charlotte, N.C.

To the Editor:

I fail to understand the shocking lack of taste evident in Arthur Levin's ('65) piece about Drs. Hussey and Rutstein. I also fail to understand why the article was printed. It is evident that young Mr. Levin does not need to listen to anyone because he knows it all.

Perhaps if he had practiced some well-mannered writing as a child he might have developed more accuracy: Dr. Rutstein is *not* head of the department (sic) of public health.

MRS. MURRAY EDEN
Cambridge, Mass.

(Our sincere apologies: Dr. Rutstein is professor and head of the department of preventive medicine. Ed.)

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Along the Perimeter



Dr. Barger

A. Clifford Barger Elected First Robert Henry Pfeiffer Professor

A. Clifford Barger '43, professor of physiology and leading authority on the pathophysiology of the cardiovascular and renal systems, has become the first Robert Henry Pfeiffer Professor of Physiology at the Medical School. This professorship is one of three to be established by the University through a gift of \$1,500,000 to the Program from the Gustavus and Louise Pfeiffer Foundation in New York.

The new chair honors the memory of one of the nation's outstanding scholars of Old Testament history; Dr. Pfeiffer, who died in 1958, was Hancock Professor of Hebrew and other oriental languages and curator of the Semitic Museum at Harvard University. Dr. Pfeiffer's highly specialized studies of Assyriology led to Harvard's acquisition of the 15th Century, B.C., Nuzu collection of cuneiform tablets, source materials of great value to scholars of Mesopotamian history.

In earlier studies, dating from 1950, Dr. Barger investigated abnormal kidney function in relation to circulatory insufficiency and found that even the slightest impairment of cardiac activity can lead to abnormal sodium excretion by the kidney.

Dr. Barger is regarded as "one of the most gifted teachers of undergraduate medical students." More than twenty research fellows have worked and published papers with him, and, of those, two are now full professors and six are associate professors, all at other medical schools.

Animals have often been an integral part of Dr. Barger's research, and, because of this, he has devoted much time and effort to upgrading the care given to all laboratory animals used in his department.

Dr. Barger received his A.B. from Harvard University in 1939 and his M.D. degree from the Medical School in 1943. After serving in the U.S. Army at the Climatic Research Laboratory in 1944-45, he completed his assistant residency at the Peter Bent Brigham Hospital and in 1946 became research fellow in physiology at the Medical School and assistant in medicine at the PBBH.

Dr. George P. Berry, in citing the wisdom and foresight of the Pfeiffer Foundation, stated: "Progress at Harvard and other leading institutions requires a strong core of full-time senior professors who are committed to teaching as well as research, and who can guide the younger scholars whose work is primarily supported by short-term research grants."

Dr. Barger was the first person to produce congestive heart failure in experimental animals similar to that produced in man. This made it possible, for the first time, to analyze the syndrome of the failing heart. Recently, Dr. Barger and his colleagues have developed new methods for measuring the redistribution of renal blood flow in dogs with heart failure.

Dr. Hay Named the First Louise Foote Pfeiffer Associate Professor of Embryology

Elizabeth D. Hay, one of the nation's outstanding younger investigators of cell growth and differentiation, has been appointed the first Louise Foote Pfeiffer Associate Professor of Embryology.

The new professorship was established by Harvard through a gift from the Gustavus and Louise Pfeiffer

Foundation in New York. The second of three named chairs to be established at the Medical School through the Pfeiffer Foundation grant, this chair honors the late Mrs. Louise Foote Pfeiffer, in whose name, with that of her husband, the Foundation was established. It is also one of 16 fully endowed name chairs to be added to the faculty of medicine under the Program for Harvard Medicine, the school's largest financial campaign ever undertaken primarily for faculty support.

"Dr. Hay's appointment," said Dr. Berry, "... accentuates the increasing emphasis during the past decade that has been given to experimental embryology at the Harvard Medical School. The perfection of techniques for disassociation and reassociation of tissues in the laboratory of procedures of immuno-clinical detection of the embryonic sites of synthesis of specific molecules, and the availability of highly resolving biochemical and biophysical methods for localizing metabolic events in cells, now make it possible to attack the problems of vertebrate embryology with renewed vigor and with the expectation of rapid progress toward understanding development at the most fundamental level."

Dr. Hay has focused largely on the source of the cells that regenerate new limbs in amphibia, and more recently, on the growth and differentiation of cells in the vertebrate embryo. As one of her colleagues recently noted, "Dr. Hay seems to be writing with electron micrographs the final chapter in the story of cellular transformation." Her work on the amphibian limb "... is a strong pillar to the modern belief that differentiation does not necessarily involve irreversible changes." By combining electron microscopy and autoradiography with classical techniques of experimental embryology, she is finding new answers to old questions in developmental biology.

Dr. Hay, who took her M.D. degree from Johns Hopkins University, worked on the staff of the department of anatomy there until 1957, when she became assistant professor of anatomy at Cornell University Medical College. She came to the Medical School as assistant professor of anatomy in 1959, and shortly after joining the Harvard faculty, she received a Lederle Faculty Award. She is a member of the Association of Anatomists, the American Society of Zoologists and the Electron Microscope Society of America.

Robert H. Ebert Becomes Jackson Professor of Medicine

Robert H. Ebert, formerly John H. Hord Professor of Medicine at Western Reserve University and director of medicine at the University Hospitals of Cleveland, has been appointed Jackson Professor of Clinical Medicine. He will also serve as head of Harvard's department



Dr. Ebert

of medicine at the Massachusetts General Hospital, where he has been named chief of the medical services. Dr. Ebert succeeds the late Walter Bauer, who died Dec. 2, 1963.

The Jackson Chair of Medicine honors the school's first professor of clinical medicine, James Jackson, who helped start the drive that resulted in the chartering of the MGH in 1811. Up to this time, therefore, incumbents of the chair have always been prominent Boston physicians who walked its wards: Henry I. Bowditch, Calvin Ellis, Robert T. Edes, Frederick C. Shattuck, David L. Edsall, James H. Means, and Walter Bauer.

Dr. Ebert began his service at Harvard as intern and assistant resident on the medical service at the Boston City Hospital. After his Navy duty, he joined the University of Chicago Medical School staff as assistant in the department of medicine, became professor of medicine there, and in 1956, he was named the Hann-Payne Professor of Medicine at Western Reserve. In 1962 he received The Distinguished Service Award from the University of Chicago.

In the clinical area, Dr. Ebert has directed his interests toward respiratory disease, primarily tuberculosis. In his basic research that reflects these concerns, he has focused on tuberculosis infection, including the effects of antimicrobial agents on the metabolism of the tubercle bacillus. More recently, he has been studying inflammation.

Alfred Pope Appointed Professor of Neuropathology

A brilliant investigator whose histochemical studies of brain tissue have enabled more precise analysis of the diseased brain, Alfred Pope '41, has been appointed professor of neuropathology at Harvard, to serve at the McLean Hospital, where he is also neuropathologist.

Dr. Pope, a graduate of Harvard College as well, has been associated with the Medical School since 1943. Regarded by his colleagues as a lucid and scholarly lecturer, Dr. Pope had a large hand in the recent revision of the neurosciences curriculum for first year students, and he organized and participated in the graduate seminars for neurology residents and fellows sponsored by the department of neurology. Many of the fellows who have worked under him have continued in this field in positions of importance.

Currently, he is engaged in microchemical studies of the pathological changes in specimens of human brain obtained following or at autopsy; this work may lead toward a more thorough understanding of the changes associated with mental deterioration encountered in middle and late life.

He has served on the editorial board of the *Journal of Neurochemistry* since 1955, as a member of the editorial board of *Neurology* since 1959, and as a member of the editorial board of the *Archives of Neurology* since 1961. He is also a member of the advisory board, Commission on Neurochemistry of the World Federation of Neurology; the Panel on Neurochemistry of the International Brain Research Organization; the Neurology Study Section of the Division of Research Grants, National Institutes of Health; and of the Research Advisory Committee, United Cerebral Palsy Research and Educational Foundation, Inc.

James D. Robertson Is Appointed Associate Professor of Neuropathology at McLean

James D. Robertson '45, who is credited with research on the spiral structure of the myelin sheath as well as the validation of the "unit membrane" theory, has been appointed to the faculty of medicine as associate professor of neuropathology at McLean Hospital.

An investigator who uses the electron microscope and the tools of the physicist to explore the fine structure of nerve tissue, Dr. Robertson is credited with originating and developing the "unit membrane" theory. This holds that cell surface membranes are all organized according to one general architectural plan.

By means of the electron microscope, Dr. Robertson demonstrated that all cellular membranes, while doubtless differing in finer details, are organized like the membranes of the Schwann cells of nerve fibers. It was demonstrated by Dr. Robertson in 1955 that mature myelin con-

sisted only of a spirally wound, closely packed Schwann cell membrane, as had been postulated a short time before by Dr. Betty Geren Uzman, research associate in pathology at Harvard. Current research is aimed at elucidation of the finer structure of membranes.

Much of Dr. Robertson's research on the myelin sheath and the "unit membrane" theory has come about during the last decade. From 1952-55, he was assistant professor of pathology and oncology at the University of Kansas, after which time he worked in the department of anatomy, University College, London, under Professor J. Z. Young, and since 1960, he has been assistant professor of neuropathology at McLean Hospital. Dr. Robertson, who also has a Ph.D. degree from the Massachusetts Institute of Technology, is a member of at least nine national and foreign professional organizations.

Andelot Professorship

Two gifts totaling over \$1.5 million for medicine and public health have been received from Lamont duPont Copeland, president of E. I. duPont de Nemours and Company and a graduate of Harvard College, '28.

Mr. Pusey said Mr. Copeland's gifts to the Faculty of Medicine and the Faculty of Public Health would permit the two faculties to launch concerted efforts toward the solution of world population problems.

The gifts establish the Andelot Professorship in the Medical School, and the Andelot Endowment for World Population Studies in the School of Public Health. Both gifts honor the family name of Mr. Copeland's mother, Louisa d'Andelot Copeland.

Dr. Berry said, "The first incumbent of the newly established Andelot Chair in the Faculty of Medicine made possible by Mr. Copeland's magnificent gift, will, in accordance with his wishes, be an outstanding scholar in the department of obstetrics and gynecology in the field of the biology of human reproduction."

Mr. Copeland is vice-chairman of the World Population Study Campaign of the Planned Parenthood-World Population.

Program Notes

The Program for Harvard Medicine reported last month that it had raised \$36,703,388 towards its \$58 million goal. Medical School Alumni and their wives have contributed \$936,127 of this total, after only a few months of organized effort. The Alumni are seeking \$3.5 million as their share in the Program.

Meanwhile, annual giving to the Alumni Fund is running about even with last year at this time in dollars but slightly behind in number of donors. Annual giving is one habit that HMS would hate to see broken, and Alumni are asked to first make their gift to the Fund, then consider their commitment to the Program.

Kate Macy Ladd Chair

A new Chair, to be known as the Kate Macy Ladd Professorship in Obstetrics and Gynecology, has been established in the Faculty of Medicine. Endowed by a grant of \$500,000 from the Josiah Macy, Jr., Foundation in New York, the chair honors the late Kate Macy Ladd, who established the Foundation as a memorial to her father in 1930.

Dr. Berry applauded the Foundation's move in helping to provide the long-term stability necessary for the HMS department of obstetrics and gynecology to continue its teaching and research programs concerned with problems of human development. Ten years ago a study was begun at the HMS and the Boston Lying-in Hospital which focused on man's first beginnings, his embryonic and fetal growth and his postnatal development into adulthood, on the processes concerned with the creation of an individual, and on peculiarities of structure and function in the female.

This emphasis, Dr. Berry noted, "... has grown to encompass a breadth of biological interests, including biological genetics, immunology, developmental biochemistry and cellular differentiation.

"The process of human reproduction, not only presents basic biologic problems that ramify into all fields of medicine, but also involves social and economic considerations upon which the very survival of democratic governments may well depend. The goal should be not more babies, but better babies."

Dr. Duncan E. Reid, head of the department of obstetrics and gynecology and William Lambert Richardson Professor of Obstetrics at Harvard and the Boston Lying-in Hospital, recently called attention to the fact

that many mental retardation and congenital defects, although not curable, may be preventable.

"To get to the root of abnormal development," Dr. Reid said, "research must address itself to all phases of growth, both normal and abnormal. It is only in this broad context that sound medical planning for generations yet unborn can be effective."

During the past eight years the Macy Foundation has also provided sponsorship for a highly successful program that prepares young men for academic positions in the specialty of obstetrics and gynecology. This program is centered at the Boston Lying-in Hospital and draws both medical students and graduates in various stages of their internships or residencies.

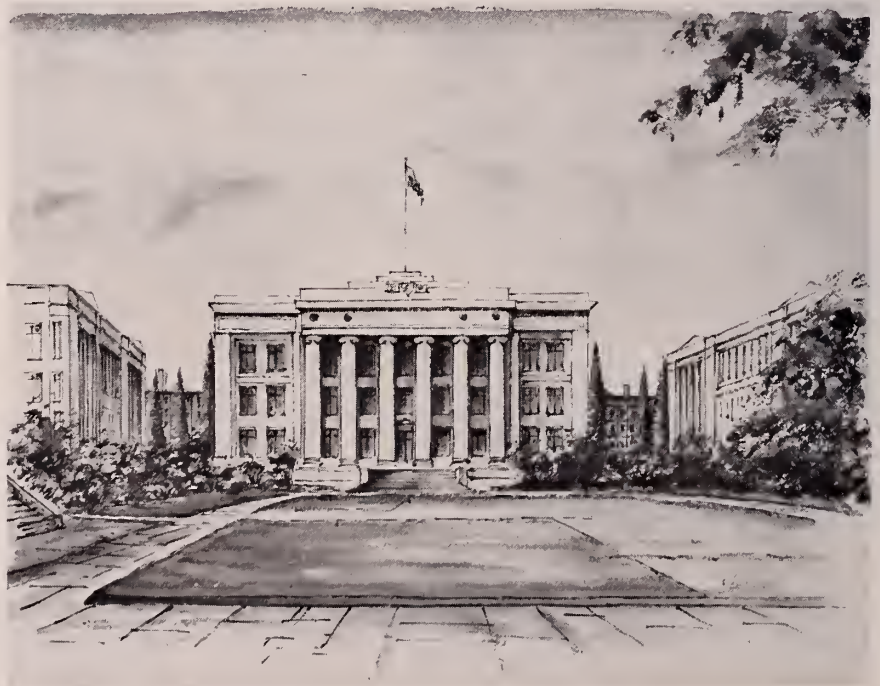
The Kate Macy Ladd Professorship in Obstetrics and Gynecology is the fifteenth fully endowed name Chair to be added to the Faculty of Medicine at Harvard under the Program for Harvard Medicine.

Expansion Dedications at the PBBH

In December, 1963, the Peter Bent Brigham Hospital held simultaneous ceremonies to dedicate their four new units; the Merrill C. Sosman Department of Radiology; the S. Burt Wolbach Pathology Research Laboratories; the laboratory of electron microscopy; and the biophysics machine shop.

The new Sosman Radiology Department has been named for Dr. Merrill C. Sosman, professor of radiology at the Medical School and radiologist-in-chief at PBBH, who pioneered in the x-ray diagnosis and treatment of pituitary diseases and tumors and in the detection of calcification within the living heart. The new department will be under the direction of Dr. James B. Dealy,

On December 9th, 1963, this watercolor painting of the Harvard Medical School was presented to Dr. Sidney Farber, professor of pathology at the Children's Hospital Medical Center, by Mr. Norman Knight, president of Knight Quality Radio Stations, on behalf of the late President John F. Kennedy. The presentation was made at the 15th anniversary dinner of the Children's Cancer Research Foundation in Boston. At a meeting with President Kennedy in Washington only a few days before his assassination, Mr. Knight asked if it would be possible for him to attend the dinner, but President Kennedy was forced to decline because of prior commitments. He instead presented Dr. Farber the painting.



Jr., who has been associate clinical professor of radiology and radiologist-in-chief at the PBBH since 1957.

The department accommodates a new 6,000,000 volt linear accelerator for x-ray therapy, which weighs 11,200 pounds.

In the new S. Burt Wolbach pathology research laboratories, investigations will focus on cytogenetics, histochemistry, ultraviolet microscopy, vascular patterns in diseases of the heart, the lungs, and kidneys, with particular analysis of the latter for factors that influence the course of transplanted tissue or organs. Dr. Gustave J. Dammin, Elsie T. Friedman Professor of Pathology and pathologist-in-chief, PBBH, is the chief investigator for all these projects. Dr. Wolbach was the fourth Shattuck Professor of Pathological Anatomy and pathologist-in-chief at the PBBH.

The laboratory of electron microscopy, which is located in the main pathology laboratory area, contains RCA's latest model electron microscope, a laboratory to prepare slides, and a dark room.

The biophysics machine shop, an adjunct to the biophysics research laboratory, will provide an opportunity for scientists, doctors, and engineers to design and build equipment for the basic research now being conducted in the laboratory. Dr. Bert L. Vallee, associate professor of medicine and physician at PBBH, is director.

"The Little Mob of Volumes"

Last month, January 29, marked the anniversary of Oliver Wendell Holmes' presentation of his personal collection of nearly 1,000 medical volumes to the Boston Medical Library. Considering the long bond between the Medical School and the Boston Medical Library, it was fitting that the library's second reception for Dr. Holmes' collection, like the first one in 1889, was attended by distinguished Harvard physicians and Boston librarians. Among those invited to make remarks were C. Sidney Burwell, Samuel E. Levine Professor of Medicine, Emeritus, former dean, and special consultant to the dean: Howard Sprague, president of the Boston Medical Library; Dr. Berry; and Henry R. Viets, curator of the library and former lecturer on neurology.

When Dr. Holmes presented his gift, the suffragette movement was storming the Harvard Medical faculty, America had taken its first shave with the safety razor, and the School had recently built on Boylston Street. The fair sex, razors, and the Medical School have changed, but Dr. Holmes' remarks at the earlier reception are still timely.

"Do not look with contempt on such of your old books as seem to be mere treasuries of unwisdom," he said of his library that ranged over four centuries:

The debris of broken systems and exploded dogmas form a great mound — a *Monte Testaccio* of the shards and remnants of old vessels which once held human beliefs. If you take the trouble to climb to the top of it you will widen

your horizon; and in these days of specialized knowledge, your horizon is not likely to be any too wide.

The writers of these "vessels," he pointed out, "were and are, men of common sense — good, strong, coarse, common sense . . ." Physicians such as Sydenham who prescribed "roast chicken and (a) pint of Canary" for "male hysteria" were to be praised, as were Dupuytren and Van Helmont for their "infinitesimal, or make-believe dosing," which Holmes considered a lesson to "over-drugging doctors" and earlier versions of the "mind cure," described by physicians of his own day.

Of the volumes in his own field, anatomy, he could not resist remarking:

The figures in the huge volume of Spigelius will always attract attention for the grace and beauty of the females who display their viscera as if they were their jewels and laces. These are not likely to be overlooked by the lovers of undisguised nature and naked truth.

"We may hope," he concluded, "that in time all the important branches of medical science and practice will be fully represented on our shelves." And so they have. Not only has the Boston Medical Library grown from 40,000 to 200,000 books since 1889, but its merger with Harvard in the Countway will create the largest university-affiliated medical library in the country.

Dr. Holmes



Around the Periphery:

The Good Ship MGH

What's going on at the MGH? That old luxury liner of the voluntary, teaching hospitals is beginning its second 150 years, and like Noah's ark, it has at least two of everything, but is particularly heavy in tigers. It is, as usual, steering a course through the uncharted and troubled waters of human disease and social problems. Its compass and rudder remain sound — so its present crew thinks, allowing, however, that historians will say the last word — and its main port of desire is the best possible care of its community of patients. Its speed is, as always, slowed and altered by the fog of misunderstanding and poor communication, too many tigers 'rastling for the tiller in the wheelhouse, and the problems of States rights (Service rights) versus the national (overall hospital) interest. In addition, a number of agents are struggling to board the ship and determine its direction: the State Welfare Department, or rather, that of Inadequate Reimbursement; the Blue Cross, that is, Inadequate Community Participation in Net Free Care; the Massachusetts Medical Society — "No Blue Shield for House Staff," "Hospital Should Pay," and, "Hospital Rates are Too High," as well as the Town and Gown Dilemma, or as Pogo said, "We have met the enemy and they are us!" — the Federal Government, or Effort Report; and an assorted smattering of mice trying to gnaw holes through the old girl's bulkheads.

The ship is well-balanced with 1,012 beds, an annual budget of nearly 31 million dollars (24 million for patient care and 7 million for research), nearly 5,000 people working to keep the ship running smoothly (including 250 active practicing staff, 180 house staff, 4,000 employees, 450 graduate nurses, 400 student nurses), and has over 50% of the Harvard Medical Students for their clinical teaching at any given time.

Right now the tigers are all struggling with the problems of: clinical teaching utilizing private patients; the inadequate ambulatory clinic system; a major new construction program which will centralize and expand the surgical operating rooms and the clinical laboratories, radiology and radiotherapy facilities, administrative offices, dining and kitchen facilities — all for 8.7 million

dollars plus \$750,000 for the modern radiotherapy facility; expansion of the Research program by a major addition to the Research building for which the money is now in hand; and finally, recruiting the outside agents listed above in an effort to do away with poor understanding and to delineate the lines of authority and responsibility in regard to the future direction of the ship.

If the MGH tigers don't all turn to butter chasing the tails of these problems, the future is bright and offers unsurpassed excitement and opportunity to contribute. Recently three new HMS Professors and MGH Chiefs of Service have boarded the ship and give every promise of helping to maintain balance, solve problems, and contribute to the tremendous momentum which is generated and regenerated with each new generation. All on board are heaving to, to assist the vitally important amalgamation of 5 of Harvard's affiliated hospitals, doing so willingly and securely.

Over the past 2 years I have heard all sorts of rumors from all parts of the country that the old MGH has "gone to hell," is a "research institute," is going to be levelled by this and that, and so on. I am reminded of the man on television who advertises from sunny Florida for one of the airlines, shouting from a patio of shuddering palms, "Come on down!" . . . and so say I, and see for yourself. This magnificent old liner faces into the future with confidence and welcomes the storm of new social, medical and economic issues of patient care, teaching and research while being pushed forward by the steady old engines of excellence and *caring* . . . above all . . . *caring*. It is an honor to toil and oil in the engine room!

JOHN H. KNOWLES, M.D.
General Director
Massachusetts General Hospital

"The Good Ship MGH" is the first of a series of feature articles that the Bulletin plans to run on the Harvard associated teaching hospitals under the heading, "Around the Periphery."

Inside HMS:

Recent Advances in Athletics



Quite some time ago we were introduced to a sport which is widely played in this part of the world but which is largely unorganized and receives only now and then a sniffle of publicity. We refer, if the occasional subscriber's wife who reads this will pardon our good-natured irony, to the Indoor Physician Hunt.

We announced our intention to become a doctor rather early, so we've grown up with the game, accepted with obliging noblesse the fact that we always have to be "it" (Oh, for a good old democratic game of Chinese tag), and, having reached the third year at HMS with celibacy (the object of the game) unmarred, we don't mind indulging in a little self-congratulation. The way we look at it, we're still in good shape and wouldn't dream of resting on our laurels, so we generally allow any challenger to have a crack at us. Curiously enough, these contests are usually arranged by a disqualified classmate, and we accept them cheerfully.

The engagements become especially proliferative on Sunday afternoons during that sodden, impacted time of year between the last televised Giants game and the first balmy double header at Fenway Park. Our latest tilt took us to a covetable piece of Chestnut Hill real estate belonging to a well-loved and, we surmised, well-heeled physician. The pre-game briefing from our scouts was a bit terse, if not downright sketchy: we knew only that a daughter, a Smith graduate of, well, more than recent nubility, dwelt therein. But we adopted a light-hearted, come-what-may frame of mind as we left our Volkswagen to make friends with a black 3.8 liter Jaguar which was grazing at the edge of the driveway.

We knew we were in for a most civilized Physician Hunt. During our puberty we were subjected to a lot of vulgar cheek-pinching by enterprising neighborhood mothers who made the blithering assumption that we would return from medical school to bear off their daughters. Now, if nature abhors a vacuum, girls' mothers *abominate* an unwed medic, and yet this particular girl's mother, in her impeccable taste, did not so much as pat our knee as we lunged and parried over cocktails. We were even granted a time out with brandy and cigars in the library after dinner while the ladies withdrew to the living room with their own locker-room chitchat.

The daughter, whose given name, whimsically enough, turned out to be Artemis, was alas, a wee bit hirsute to our way of thinking and had outrageous teeth, but we went ahead and made some guarded inquiries in the area of her personal affinities, and we were not surprised to learn that she was a psychiatric social worker, that last year she had retired the East Coast Junior League Jai-Alai Cup, and that her favorite color was pink. Some of the assembled company, led by the aforementioned impeccable mother, began to agitate in the direction of our going out back with Artemis to see the doctor's champion hounds. We stiffened at this, some distant, Arcadian memory tugging at our sensorium, as if to warn us. Deftly, we recalled that we were going to have to give a little talk on bush tea poisoning before our medicine instructor the next day, and to soften our departure, we indicated that we might not be averse to a rematch on our home field in the not too near future.

GARY E. POSER, '64

Slope Orthopedics:



A Splint-er Group

by Arthur E. Ellison '51



Four thousand years may separate the animal-tusk skis found in the Hoting Bogs, Sweden, from this weekend's lift lines, but the sport of skiing has just begun to really grow. In fact, an excellent case could be made that skiing, and certainly the ski industry, began its significant development after World War II.

No other sport and few other industries were as effectively wiped out as skiing was during the war. Almost totally dependent on petroleum products for travel and for the operation of its obviously nonessential uphill facilities, commercial skiing became virtually nonexistent. With peace regained, however, no other sport and few industries have demonstrated the incredible vigor and growth of skiing. The first winter after the Armistice, only 14 areas in all of New England reported snow conditions; by 1962 there were over 100. In 1946, the nation had about 185 uphill facilities, the majority of which were rope tows. In 1963, this number exceeds 800, most of which are lifts. It is estimated that under 100,000 people were skiing in all of America in 1946. In 17 years this total has increased by well over 3,000 per cent, with more than 250,000 skiing for their first time each winter.

Growth of this magnitude usually brings problems as well as blessings. The most significant of these is the number of injuries. The nature of skiing, and perhaps more important, the nature of man, ensure that the sport will always be associated with injuries. As the number of active skiers increases, the ranks of hardy outing club-

Arthur E. Ellison '51, a resident of Williamstown, Mass., is in orthopedic and hand surgery. For his work with ski injury, on its treatment and epidemiology, he has been named special consultant in skiing to the Surgeon General, national medical advisor of the National Ski Patrol System, and chairman of the National Ski Patrol Foundation.

(Left), Ski Patrol administers on-the-spot first aid.

bers are thinning, and the slope population grows ever more heavily weighted with the soft secretary type. We run the serious risk, therefore, of seeing the accident rate slowly climb and climb, yielding woe for the skier and misery for the industry.

As doctors, we have been concerned with this problem since 1957. The year after I completed a residency program in Boston, I joined Edward J. Coughlin, Jr., in the practice of orthopedics in the delightful Berkshire community of Williamstown, Mass. Because of the geography of the region, virtually all inhabitants of northern Berkshire and southern Vermont ski areas drain into our practice area for their medical care. Moreover, my entree into orthopedic practice happened to coincide with the amazing growth of what is now the

world's largest ski area, Mt. Snow, Vermont, and much of our patient load originated from there.

It rapidly became obvious that during the ski season, our weekends were to be consumed by the sport of skiing. As a skier of some 30 years, I would frustratedly attempt to pursue the sport, knowing full well that within a matter of hours, if not minutes, I would be called to the local hospital to repair some injured skier.

The agony of waiting for the phone to ring became so severe that in the fall of 1958 I elected to anticipate it, and each Saturday and Sunday during the season, I went to the office of Dr. Milton Wolf, a general practitioner in Wilmington, Vt., to help out. Mt. Snow was in his home area, and since its inception, he has cared for the bulk of its health problems.

Reasonably comfortable after his rapid descent on the sled stretcher which was "driven" by the Mt. Snow Ski Patrol, the patient awaits removal for further examination by Dr. Ellison and his associates at the slope clinic.





The Ski Patrol, whose headquarters are adjacent to the slope medical facility, keep their men and equipment in constant readiness. Of every 1,000 who ski each day, six will be injured.

Even this was inadequate. Not only was his office up a long flight of stairs, presenting a hazardous obstacle course for the lame and the halt, but it had been set up for general medicine in a sleepy little Vermont hamlet, not for handling mass casualties. It was not at all unusual to see the last of the day's patients at 10:30 at night, and those with sprains early the following morning, if they did not succeed in getting you out of bed in the middle of the night.

From the beginning, it was clear that the only place for a medical facility faced with a large volume of injuries was at the site of their origin. Aware of the maxim of Bart Quigley '33 and others that every football game should have a physician in attendance, I began to formulate what has now become a constant cry; every major ski area should have competent physicians in attendance at the slope. If a football game in which 22 boys play for one hour demands the presence of a physician, it is inconceivable that a ski area with a hundred times that number or more skiing for an entire day should be totally devoid of all but minimal first aid. Even worse, most ski areas are located in such rugged mountain areas that the nearest help is many miles away.

When we presented these thoughts to Walter Schoenkecht, president of the Mt. Snow Development Corporation, he enthusiastically adopted them, somewhat to our surprise, and that very season a medical facility was built for us at the base lodge. It was remarkable then,

as it still is today, that the owner of a ski area would cooperate so wholeheartedly. Area operators frequently feel that anything vaguely associated with ski injuries is a dark blot on the sport, and that the less attention one pays to it, the better off the sport will be. I should add that our later research studies and any other contributions we may have made to the general knowledge of the ski injury problem would have been impossible without the constant cooperation of Mt. Snow. If this cooperation is emulated by other ski areas across the nation, it would be of great help to skiing.

As with many growth operations, our original one room, small portable x-ray machine and tiny darkroom now seem incredibly inadequate. Since then, our facility has been enlarged to include a small surgery for lacerations or other open wounds, more office space for the growing secretarial and nursing service, and finally, this year, a completely new, specialized medical facility. We now offer definitive care to approximately 92 per cent of all the injured in the Mt. Snow area and treat many of the general ills at the resort as well.

One of the most significant and unique advances of our medical facility occurred in the winter of 1959. I was riding the lift, and as I invariably do, I surveyed the equipment of my partner on the chair and proceeded to ask a few questions. To my pleasant surprise, I was riding with Donald Rife '60, who was then in the third year class at Harvard Medical School. I invited him to



Before removing either the temporary splint or the patient's boots, Dr. Ellison x-rays the site of injury.

our medical facility, and he became so enthusiastic about the combination of the magnificent skiing at Mt. Snow and the volume of trauma that we see that he raised the possibility of spending a month with us during the winter of his fourth year. Out of his stay has grown a teaching program that offers an elective month during January, February, and March to three members of the fourth year class. These three now consider themselves quite fortunate to be selected for the job, for it is always well over-subscribed. As our mountain medical facility expands, (Mt. Snow has presently completed about 50 per cent of its planned development), we hope this program will grow with it, in size and value.

Another chance meeting with strong Harvard overtones has permitted Mt. Snow to make a major contribution to ski medicine. In 1959, while serving on a panel at the Boston meeting of the American College of Surgeons on the subject of ski injuries, I had the opportunity to renew my acquaintance with Bill Haddon '52. Bill had just completed a valuable study on the epidemiology of pedestrian fatalities and was presenting a preliminary report. It became immediately obvious that an epidemiological approach would be of great value in determining the causes of ski accidents. After many conversations, months of work, and a contract from the Public Health Service, we finally published two papers, one on the epidemiology of Mt. Snow accidents and the other a clinical study.

The epidemiology paper, of which Bill is the senior author, recently won the Metropolitan Life Insurance Award for the most valuable contribution to the field of accident research in the year 1962. To embellish and supplement these studies, we are currently working under a contract from the Public Health Service on slow motion moving picture studies of ski injuries as they actually happen. These will give us a better chance to study the forces involved.

It is now possible to say that for every 1,000 people on the slope on one day, approximately six will be injured, three of them seriously enough to lose time from work. The beginner is by far the most vulnerable; his injury rate runs up to eight times higher than his expert friend. Females are also significantly susceptible. Of the 35 per cent populating the slopes, they sustain 47

per cent of all injuries. It is also interesting that the fair sex is protected by present release bindings to only a minimal degree, if at all. Probably this is because her musculoskeletal structure is lighter, and possibly she is more ignorant about the mechanical intricacies of the bindings themselves. Men with release bindings have a significantly lower injury rate than those who do not.

Analysis of the injuries shows that 80 per cent involve the lower extremity and 43 per cent of all injuries are sprains. A substantial 35 per cent are fractures, of which the so-called "ski fracture," the external rotational fracture of the lateral malleolus, is by far the most common. Of the severe injuries from skiing, fractured tibias and fibulas are the most prevalent; our own combined practice runs close to 100 such fractures each year.

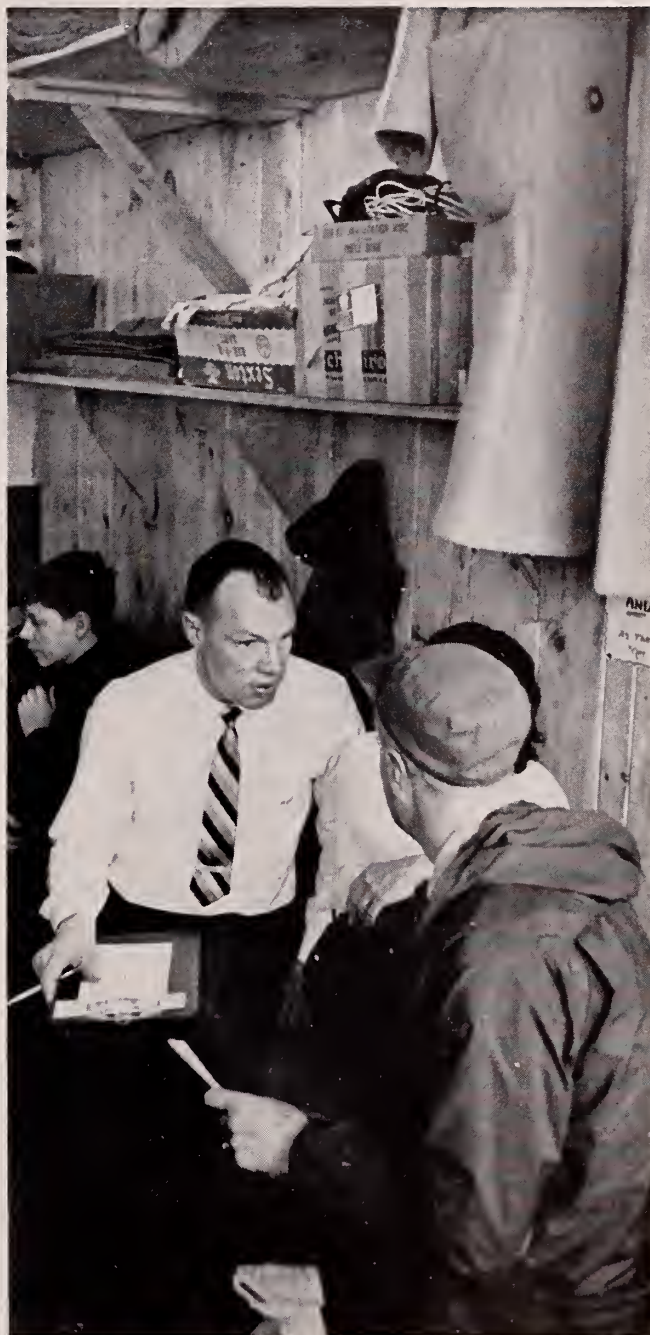
In spite of such sobering statistics, skiing continues to ride the nose cone. As long as interstate highways make the mountains ever more accessible, the shorter work week provides the time, and an expanding gross national product provides the economic means, the sport and industry of skiing will plunge forward at its already dizzying pace.

It is only right that it should! I am always asked how I could possibly ski after seeing so many injuries. Part of the answer is certainly in the statistics. The number of better skiers who are injured is very small. Far more important, however, skiing provides an experience or an expression that I — and obviously hordes of others — find important, if not essential. I am always reminded of the remarks of Jean Behra, the French Grand Prix star. He said, "To move is to risk death. But not to move is to be dead already." Skiers like to move — and fatalities are virtually nonexistent.

REFERENCES

William Haddon, Jr., Arthur E. Ellison, and Robert E. Carroll, "Skiing Injuries: An Epidemiological Survey." *Public Health Reports*, United States Department of Health, Education, and Welfare: Vol. 77, No. 11, pp. 975-91, November, 1962.

Arthur E. Ellison, Robert Carroll, William Haddon, Jr., and Milton Wolf, "Skiing Injuries: A Clinical Study." *Ibid.*



Dr. Ellison takes a case history of the latest arrival to the "patient waiting room."

When

Witches Brew

'Tis the

Devil's Due

by Peter Block '64

The author originally presented this article last fall to the Boylston Society.

*D*uring the time of Dark Age medicine in Europe, when learning and investigation were at an ebb and doctors were poorly trained, only one group possessed a copious knowledge of pharmacology. These were the witches. Occasionally trusted, more often feared and persecuted, the witch served the peasant community as doctor, midwife, sorcerer, fortune teller, veterinarian, and marriage counselor, from the beginning of the Christian era up through the 18th century.

No one knows exactly how and where the witch cult began. Ever since history has been recorded, the magic they practiced has been inextricably bound with countless religions, and only a few, tenuous threads link the dim, pre-Christian past with the "black arts" of the witch.

In early matriarchal societies, woman was considered the guardian of the sacred fire and giver of life; through these roles she gradually acquired a knowledge of herbs, for use as aphrodisiacs and in medicine. Later the priest cults of more highly developed civilizations, such as that of Egypt, employed magical powers similar to those used by the witch. To subdue their subjects, Egyptian sorcerer-priests used totemistic identification with animals and abnormal controls over the mind and body.

Still later, Roman sorceresses bequeathed many rituals intact to the medieval witch. As Hughes describes:

Isis, according to Plutarch, was the great female generative power, the essence of things. Her cult in Egypt spread throughout Europe and western Asia, and many attributes of the witch were similar to those of Isis.



An English witch-hanging. Pen and ink drawing is from the 17th century.





When witches departed for the Sabat, they were thought to assume animal forms. The drawing is by Ulrich Molitor, 1489.

out several little boxes. Removing the lid from one and pouring some ointment therefrom, she rubbed herself for a considerable time with her hands, covering herself with the oil all over . . . Then, after she had muttered a long while in a low voice . . . she shook her limbs with tremulous and jerky motions, then gently, until soft feathers emerged from her . . . Thus did Pamphilia become an owl.

More than a thousand years later, the same anointment ritual was part of European witch lore.

With the rise of the Church, these and other rituals came to be regarded as devious, pagan, and emanating from the devil. The cult of this horned deity was not easily suppressed, however. Religion had become profoundly pessimistic, ascetic, and powerful. Disease was considered the will of God, and this life was viewed as a necessarily uncomfortable road to the next. Some people felt it was better to make a pact with the devil to obtain material prosperity, knowledge of drugs, sexual abandonment and periodic revelry, rather than conform to a religious system that promised eternal salvation to a few and an eternity of brimstone to many.

It is not surprising, then, that from the beginning of the Christian era, witches were dogged by persecutors. In 681, the Council of Toledo decried the "worshipper of idols, those who venerate stones, who kindle torches . . .," and in 1343, the Bishop of Coventry was accused before the Pope of doing homage to the devil.

Those attracted to the witch cult included converts, surviving followers of pagan cults, intellectuals who had reacted against Christianity and were drawn to the religions of the Near East, and "patrons," or "customers."

Although initiation into the cults, or "covens," varied slightly from locality to locality, the ceremony had certain constant elements. The initiate first gave her free consent to becoming a witch. (Sometimes children were brought up as witches. Murray gives several examples of this, among them a Janet Howat, who was presented so young that "the Devil said, 'What shall I do with such a little bairn as she?'" It seemed the answer was not long in coming, for she is later referred to as "his bonny bird.")

She was then required to make a denial of Catholicism and do various symbolic sacrileges, such as spitting

. . . covering their bodies with goat skins . . . they danced. Goats were sacrificed, and women were whipped with straps made from the hides. Masks were worn . . . and spells . . . were cast on enemies. As well as poisons, aphrodisiacs were manufactured — not always successfully, for Lucretius, for example, is said to have died from an overdose of love potion. Preparations were made from . . . sloughed skins, saliva, tubercles from the forehead of a new-born foal, and all those animal by-products the handling of which gave an intimacy with nature now felt only by guilty schoolboys and professional zoologists. By sympathetic magic, rivals could be bewitched so that their hair fell out, and undesirable competitors could be made impotent. This was possible by sticking a pin into the liver of a wax model . . . for the liver was considered to be the seat of the sensual passions.

Apuleius gives another vivid description of classical witchcraft in his story, "Metamorphoses," which describes the sorceress Pamphilia as

having unlocked a certain cabinet, (she) took

on the cross and vowing her soul and body to the devil. After this, she would sign an irrevocable pact with him in her own blood, and her new, secret name was then entered in the "black book."

Finally, the new witch would receive her "mark" from the devil. Such a mark branded her forever and was incontrovertible proof to the examiners at witch trials. In Hole's *Witchcraft in England*, Dalton describes these marks as

sometimes like a blue spot, or red spot, like a flea biting, sometimes the flesh sunk in the hollow. And these devil's marks be insensible, and being pricked will not bleed, and be often in their secretest parts, and therefore require diligent and careful search.

Physiologic mechanisms, particularly the actions of the sympathetic nervous system, could also brand the accused. In 1649 in Newcastle-on-Tyne, England, it was recorded that

the reputed witch finder . . . knew . . . whether they were witches or not by their looks, and when the said person was searching of a personable, and goodlooking woman . . . the Scotchman said she was, for the town said she was, and therefore he would try her; and presently in sight of all the people, laid her body naked to the waist, with her clothes over her head, by which fright and shame, all her blood contracted into one part of her body and then he ran a pin into her thigh . . . (which) did not bleed . . . and . . . (he) set her aside as a guilty person, and the child of the Devil.

Justice, however, was not to be outdone in this case. As her peripheral vasoconstriction abated and blood returned to her skin, her color was restored to normal:

Lieutenant-Colonel Hobson, perceiving the alteration of the foresaid woman, by her blood settling in her right parts, caused that woman to be brought again, and . . . required the Scot to run the pin into the same place, and then it gushed out blood, and the said Scot cleared her. . . .

Supernumerary breasts were also considered evidence of association with the devil, and were supposed to give nourishment to the "familiar" of the witches, particularly their house pets. House pets were far less common

then, and were therefore considered more eccentric, particularly since witches kept toads, grasshoppers and frogs, as well as cats and dogs. Polymastia and polythelia were so damning that the accused often excised them from their own bodies before being examined. Even birthmarks, corns, hemorrhoids, warts and other protrusions or excrescences were identified as "nourishing places," or devil's marks, by the zealous examiners.

Witches were also generally thought to have the ability to fly, mounted upon sticks, brooms or wands, although it is interesting to note that remarkably few confessed to this talent in their trials. The sensation or hallucination of flying was probably produced by certain ointments that witches used to anoint themselves. As Bouquet stated,

Some rub themselves first with a certain ointment and others use none. There are also some who are not witches but after anointing themselves do not fail to fly up through the chimney and to be carried away as if they were witches.



The Sabat feast, often an exotic and sometimes disgusting meal. The artist is Ulrich Molitor, 1489.

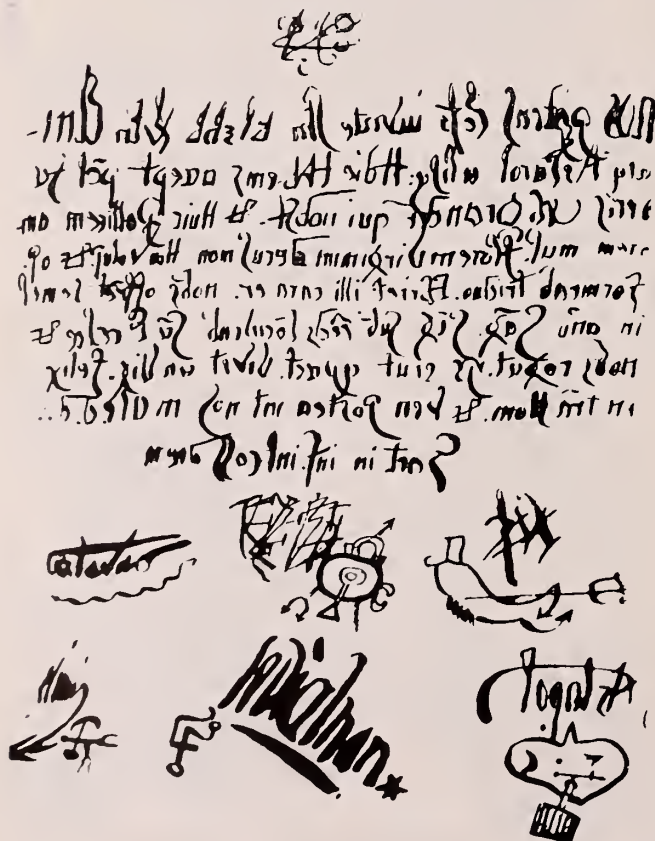
Components of the ointments varied. Most of them included grease, to which were added a series of somewhat horrible ingredients and a variable quantity of physiologically active drugs. Scot, in 1584, speaks about the ointment "whereby they ride in the aire" as being produced from the "fat of young children" cooked in a

brassen vessell, reserving the thickest of that which remaineth boiled in the bottome, which they laie to and keep, until occasion serveth to use it. They put hereunto Eleoselinum, Aconitum, Frondes populeas, and Soote.

From the recipes, it is apparent that these ointments contained potent mixtures of hemlock, an active toxic agent whose very effluvia can produce a marked narcotic effect, aconite, and belladonna, all neuroactive drugs. It seems likely that belladonna produced many witches' fantasies, for its active agents, l-hyoscyamine, from which is obtained atropine, and l-scopolamine, both produce excitatory and hallucinatory effects. Witches probably used hashish and alcohol as well.

Although witches considered their ointments a powerful tool, society feared some of their other activities far more. Long after systematic witch persecutions were ended, witches were considered capable of poisoning wells and holy water stoups, infecting flour, smearing corrosives on door handles, creating sexual strangulation

A contract drawn up between the initiate Urbain Grandier, a 17th-century Frenchman, and the devil.



in men, and spreading plague. By auto- or hetero-suggestion they could produce such effects as "spells," sexual inhibition, and wasting deaths. They were also accused of using "sympathetic magic," that is, causing an event to actually occur by performing it symbolically.

What attracted the most attention, however, was their oft-pictured celebration, the witch's sabbath, or sabbat. Considered their most marvellous supernatural feat, the sabbat combined ghouls, witches, devils, old crones, and black hens in orgiastic dancing, feasting, flying, and other devilish rituals.

It began at midnight and ended at cockcrow. First the devil was paid homage by prostrations, genuflections, obscene gestures, and ritual dances. States Bouquet:

The sorcerers dance a country dance with their backs turned one to the other. Sometimes . . . they dance in couples . . . one partner is there, another here, for always everything is in confusion.

They also danced one behind another in a straight line, whipped and prodded by a minor devil who danced last, thus giving rise to the expression, "the devil take the hindmost."

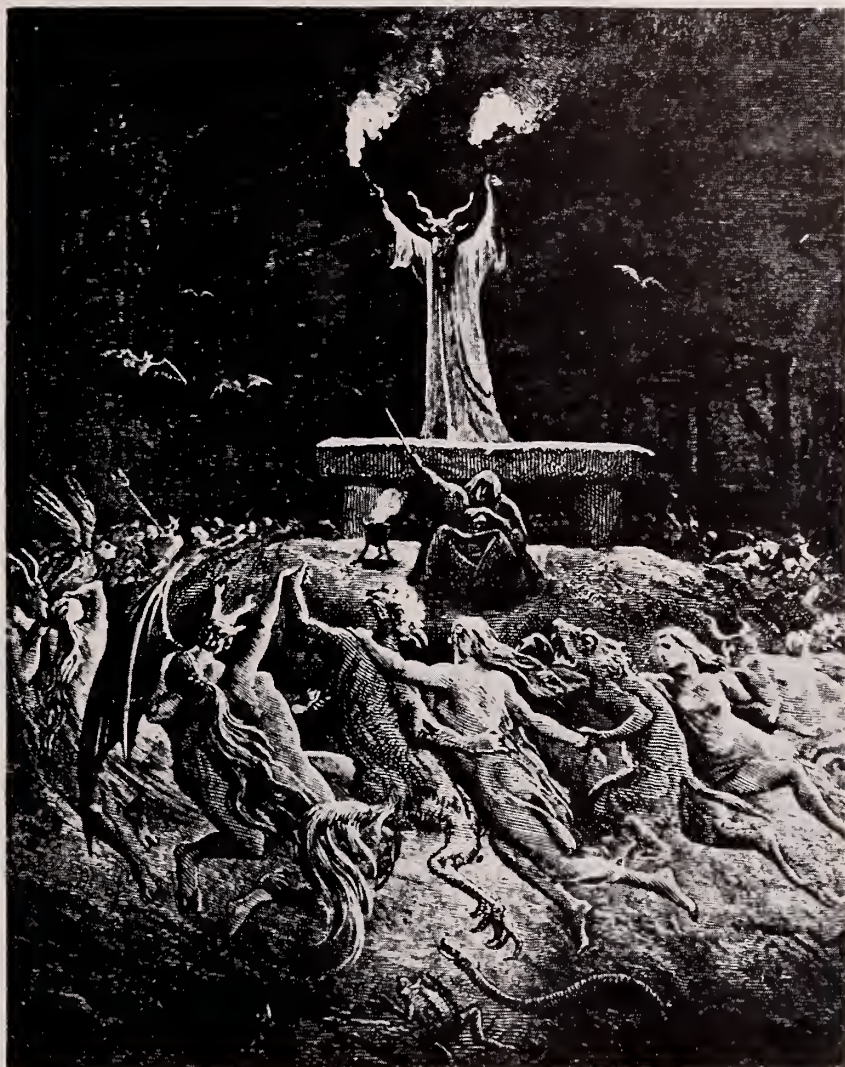
Then the participants attended a formal parody of the Holy Mass; the Lord's Prayer was recited backwards, a mock sermon was made, and absolutions were performed with the left hand. Thus *hoc est corpus* became "hocus-pocus."

Finally, after an exotic banquet with rich, aromatic wines to "excite them to revelry," all the guests abandoned themselves to the rites of fertility, the release that added so much fuel to the witch persecutions during the Inquisition.

Although scholars hold that the sabbats actually existed, some feel that certain of the witches' detailed descriptions were merely figments of imaginations enhanced by alcohol or drugs. One woman,

who had voluntarily surrendered herself to be examined as being a witch, confessed to the Dominican fathers that she nightly assisted at the Sabbat, and that neither bolts nor bars could prevent her from flying to the infernal revels. Accordingly, she was shut up fast under lock and key in a chamber whence it was impossible for her to escape, and all the while carefully watched by lynx-eyed officers . . . These reported that immediately the door was closed, she threw herself on the bed, where in a moment she was stretched out perfectly rigid . . . Select members of the tribunal, grave and acute doctors, entered the room. They shook her, gently at first, but presently with considerable roughness. She remained immobile and insensible. She was pinched and pulled sharply. At last a lighted candle was brought and placed near her naked foot until the flesh was actually scorched in the flame. She lay stockish still, dumb, and motionless as a stone. After a while her senses returned to her. She sat up and related in exact detail the happenings at

Satan presides at the Sabat. The print was done by Paul Christian.



the Sabbat she had attended, the place, the number of the company, the rites, what was spoken, all that was done, and then she complained of a hurt upon her foot.

Witchcraft, and perhaps the witch as well, live on today. Although covens and sabbats are gone, decals, mascots, charms, talismen, and horseshoes still bear silent witness to the ancient cult. In many areas, their remedies are still extant; the froth of a pricked snail dropped into the ear will serve for earache, a small portion of the human skull, grated and mixed with the food, is used for fits. A spider without legs, wrapped to the foot with deerskin, is good for gout, and the ashes of several large toads, kept in a loosely corked jar and taken in a teaspoonful of milk for nine mornings during the waxing of the moon, will take care of dropsy.

Montague Summers, in his *History of Witchcraft and Demonology*, 1923, states that the witch was

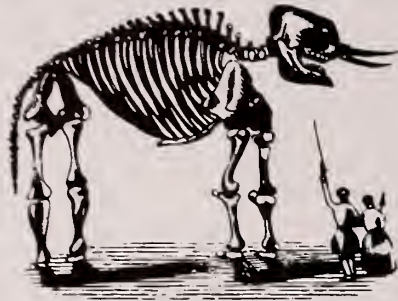
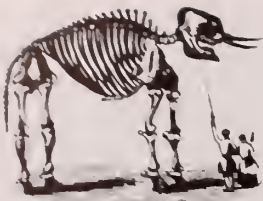
an evil liver; a social pest and parasite; the devotee of a loathly and obscene creed; an adept at poisoning, blackmail and other creeping crimes; a blasphemer in word and deed;

swaying the villagers by terror and superstition; a charlatan and a quack; a bawd and abortionist; the dark counsellor of lewd court ladies and adulterous gallants; a minister to vice and inconceivable corruption, battenning upon the filth and foulest passions of the age.

Perhaps his judgment is a bit harsh. At worst, she was all of these, but at best, she was a healer, a midwife, and a consultant in times of pestilence and hardship. As cynical as her approach to man's ills may have been, modern medicine comes little closer to assuaging some of the "devils" that plague him. As long as man remains ignorant of his nature, he will try to placate the devil, whether through witches or by tranquilizers.

REFERENCES

- J. G. Frazer, *The Golden Bough*, The Macmillan Co., N. Y., 1937.
- C. Hole, *Witchcraft in England*, Scribner's Sons, N. Y., 1947.
- P. Hughes, *Witchcraft*, Longmans, Green & Co., London, 1952.
- K. Seligmann, *The Mirror of Magic*, Pantheon Books, N. Y., 1948.
- M. Summers, *The History of Witchcraft and Demonology*, Knopf, N. Y., 1926.

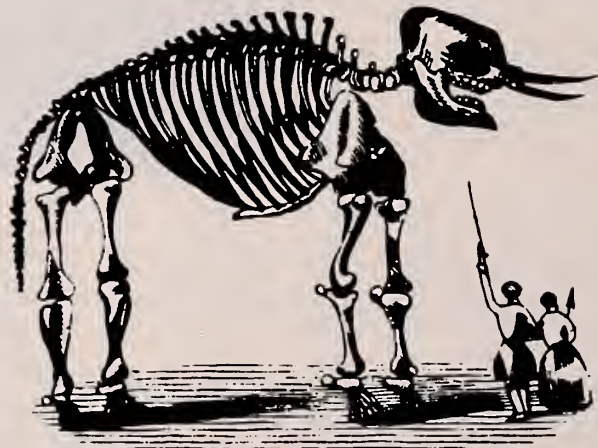


Courtesy of the Boston Museum of Science

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22 FEET LONG, 11 FEET HIGH.

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Admission 25 Cts. Children half-price

On Wednesday and Saturday Afternoons, Parents and Teachers with their Children, will be admitted for

12 1-2 Cts. each, Children 6 1-4 Cts.

Dr. Warren's MASTODON

George E. Gifford, Jr., M.A., M.D.

John Collins Warren (1778-1856) had a long and distinguished career in medicine. He held the professorship of anatomy and surgery (1815-1847) and was dean (1816-19) at the Harvard Medical School. He helped found the Massachusetts General Hospital and the *New England Journal of Medicine*, and he endowed and donated the specimens for the Warren Anatomical Museum at Harvard. On the same day, however, that he performed the most important feat of his career, the first operation with ether, he recorded another and equally absorbing interest in his journal:

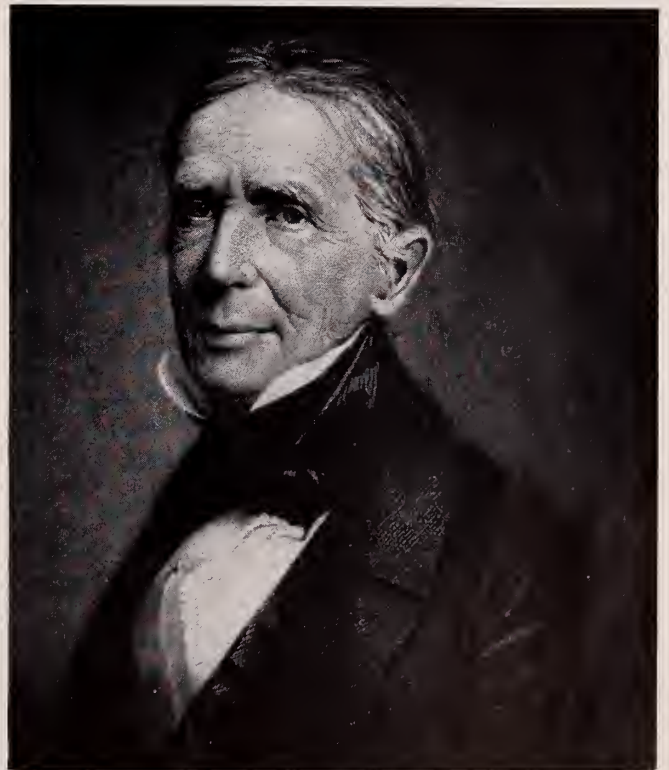
Oct. 16, 1846. In the morning, went to the Medical College to make some experiments on the renovation of decayed bones with glue. White glue gives, in some cases, a beautiful appearance; and the black gives great strength.

Did an interesting operation at the Hospital this morning, while the patient was under the influence of Dr. Morton's preparation to prevent pain. The substance employed was sulphuric ether.

Earlier, on October 9, he had written:

Passed an hour on the skeleton of the mastodon. The difficulties of the description seem rather to increase than diminish; but, as there is no monograph, I must proceed patiently till it is accomplished, which cannot be until some months.

Dr. Warren was in his seventieth year when he did the operation, and he was soon to retire from medical pursuits. In 1847, he donated his specimens for the Warren Museum and became professor *emeritus*. The same year he took up the presidency of the Boston Society of Natural History and began his bone-by-bone description of the mastodon skeleton which culminated in his classic work, *Mastodon Giganticus*, 1852, 1855. For this and subsequent works on a wide variety of



John C. Warren. Engraving by H. W. Smith.

fossils he deserves to be remembered as a pioneer amateur paleontologist.

For over a century, the mastodon had been the "great American incognitum," with fragments of its enormous teeth and bones puzzling the scientists and exciting the public. Cotton Mather had described its bones as early as 1712. When George Crogan, the Indian agent, sent some bones from the deposit on the Ohio River

An assistant in psychiatry at HMS and junior associate in psychiatry at the Peter Bent Brigham Hospital, Dr. Gifford holds an M.A. degree in the history of science from Harvard University.



This restoration portrait of the Warren mastodon, painted by Charles R. Knight, depicts him in his Hudson River habitat some 30,000 years ago.

known as Big Bone Lick in 1766, interest in the animal became widespread.

Explorations for its bones were no doubt spurred on by Buffon's theory of the degeneracy of American animal forms. Thomas Jefferson combatted this idea in his *Notes on the State of Virginia*, in which he compiled tables of the comparative weights of American and European animals to show that, if anything, animals in America were larger, and at least they were similar or identical to the species of the Old World. When Jefferson went to Paris, he went so far as to import the skin and bones of an old moose. Buffon may have been convinced by the size of this specimen, but he never publicly recanted.

Out of this quest for evidence that life in America was not inferior to that in the Old World, Jefferson developed a great interest in the "mammoth," as it was then called. In 1799, when Charles Wilson Peale, artist and museum curator, began his excavation in Webster County, N.Y., that became one of the first government sponsored field trips in American science, Jefferson supplied Navy Department pumps for the digging, and two nearly complete mastodon skeletons were exhumed.

In 1806, Georges Cuvier founded its genus, giving it the name, "*Mastodonte de l'Ohio*" (from the Greek words meaning, *mastos* — breast, and *odentus* — tooth), since its teeth were not trefoils but breast-shaped. He later changed the term in 1817, to "*Mastodon giganteus*."

Therefore, when a farmer discovered an almost complete mastodon skeleton near Hackettstown, N.J., it was a great natural curiosity, to be mounted and shown around the country. Upon its arrival in Boston (see broadside, p. 22), Warren wrote:

This collection was brought to Boston and exhibited without any great success. In order to promote its reputation, the proprietor applied to me to lecture upon the relics. . . In going over the study of these remains of former ages, I became so much interested in the subject as to wish to possess the collection.

Covet it he might, but possess it he did not. That mastodon was obtained by a subscription that John White Webster, professor of chemistry at Harvard, organ-

ized for the University. Given the name, "Cambridge Mastodon," this skeleton is now ensconced in the Museum of Comparative Zoology.

Dr. Warren did, however, have another chance to "possess" a mastodon. Mr. Nathaniel Brewster of near Newburgh, N.Y., found another skeleton. Dr. Warren wrote:

The summer of 1845 had been unusually dry; many small lacustrine deposits were exposed by the drought, and their contents removed to fertilize the neighboring fields. The spot above described, though usually covered by a small quantity of water, had been left dry, (an occurrence never known before); and Mr. Brewster, wishing to avail himself of its contents, had employed a number of laborers, to remove them. The men had dug through a thickness of two feet of peat bog, a layer of red moss about a foot thick, and then fell upon a bed of shell marl (*vide vignette*). After raising about a foot of this, they struck on something hard; and a question arose whether it was a rock, a bone, or some other substance. . . . Night approaching, it was necessary to intermit their labors until the following day.

It was indeed a bone, or rather, several bones. Buried in a pure shell-marl layer, they were in a perfect state of preservation, of light brown tint, rather than the dark brown or nearly black color of those buried in swamp muck. They composed a perfect skeleton, and were exhibited in 1845 and 1846 in New York and New England towns.

When the mastodon came to Worcester, Mass., Dr. Warren purchased it for \$5,000. Apparently, however, its sellers had later misgivings. Wrote Warren:

It was to be delivered to me on the Saturday evening following. But the proprietors seemed to wish to get rid of the bargain; for, soon after the arrival of the boxes here at the railway, Mr. Brewster informed Dr. Lane that one of the boxes had been broken open, and the thigh-bone stolen. They wished to return directly with the other parts of the skeleton to Worcester. I objected to this movement, and declared my intention to take possession of the bones brought here, and that I

This is an engraving of "one of the largest (teeth) belonging to the mastodon giganteus we are acquainted with," from *The Mastodon Giganteus* by Dr. John C. Warren.



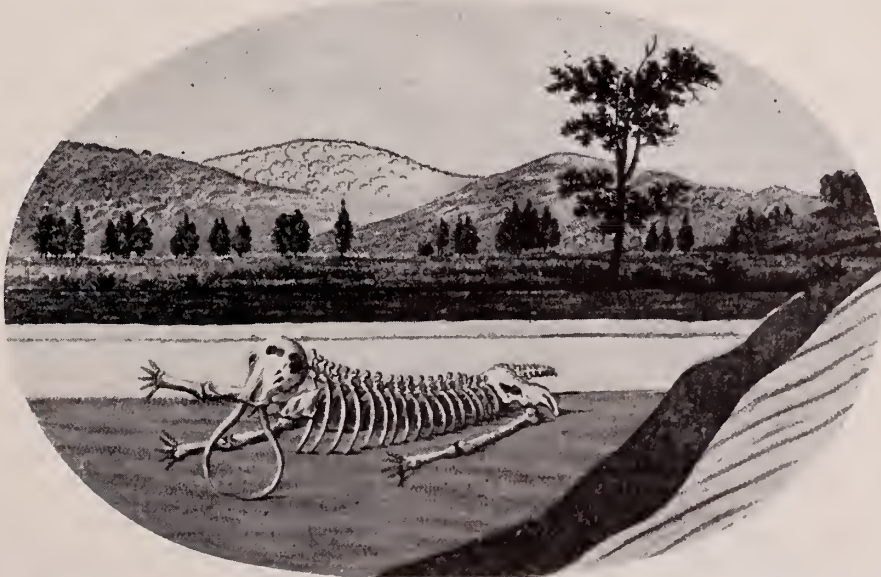
should claim a proper deduction for the last bone. I heard no more that night; and the next morning, which was Sunday, going to Corinthian Hall, where I had directed it to be set up, I found the whole skeleton set up in good order. The next morning (Monday), I paid the sum agreed on to Mr. Brewster and his brother-in-law.

Immediately after, I had the skeleton taken apart, and by the aid of Dr. N. B. Shurtleff, set up again in a posture more becoming the elephantoid character. The skeleton was then exposed to the people for three days, during which time great numbers visited it. It was, after remaining a month at Corinthian Hall, taken down and removed to the Medical College in Maston Street, corner of Winter Street, and it remained there till the beginning of 1849, when it was removed to the fireproof building in the next street, and set up in company with an elephant and other objects. My reason for being at so much expense for its preservation and protection was, that this skeleton was unique, and likely to remain so for ever.

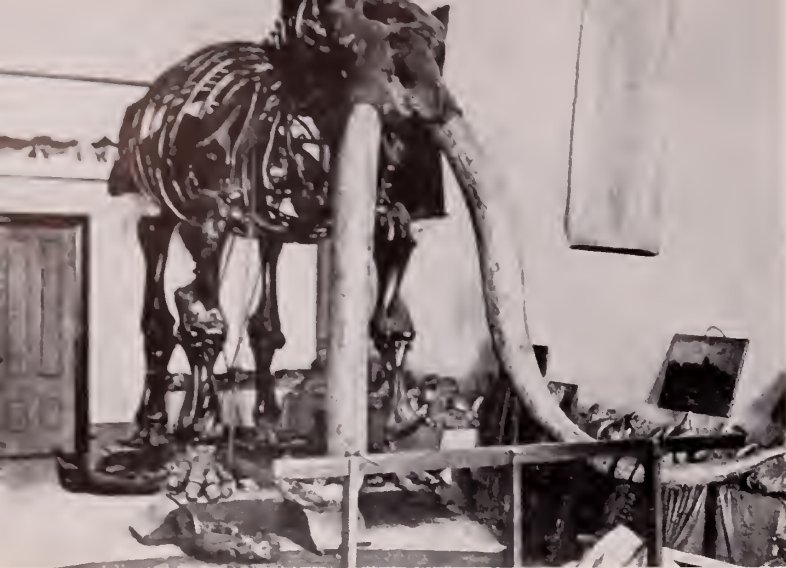
Dr. Warren was right. Sir Charles Lyell, the great Scotch geologist, verified this on his visit to the United States in 1846. He wrote in his journal:

Among other scientific novelties at Boston, I

was taken to see two magnificent skeletons, recently obtained, of the huge mastodon, one of them found in Warren County, New Jersey, which a farmer had met with six feet below the surface, when digging out the rich mud from a small pond newly drained. There were no less than six skeletons, five of them lying together, and the sixth and largest about ten feet apart from the rest. A large portion of the bones crumbled to pieces as soon as they were exposed to the air, but nearly the whole of the separate specimen was preserved. Dr. John Jackson called my attention to the interesting fact that this perfect skeleton proved the correctness of Cuvier's conjecture respecting this extinct animal, namely, that it had twenty ribs like the elephant, although no more than nineteen had ever been previously found. From the clay in the interior within the ribs, just where the contents of the stomach might naturally have been looked for, seven bushels of vegetable matter had been extracted; and Professor Webster of Harvard College, had the kindness to present me with some of it, which has since been microscopically examined for me in London by Mr. A. Henfrey, of the Geological Survey. He informs me that it consists of pieces of the small twigs of a coniferous tree of the cypress family; and they resemble in structure the young shoots of the white cedar (*Thuja*



This vignette from the title page of *The Mastodon Giganteus* describes the layers of water, moss, peat and shell marl from which the animal was exhumed. Its position gives evidence of its struggle to extricate itself.



For 57 years the skeleton was exhibited on Dr. Warren's property, 92 Chestnut St., Boston. Covered with a preservative of black varnish, the skeleton was exhibited with papier mache tusks. Along the walls behind are several vertebrae of the Zeuglodon, American fossil whale.

thuja occidentalis, still a native of North America), on which, therefore, we may conclude that the mastodon fed.

But a still nobler specimen of this great proboscidian quadruped was exhumed in August, 1845, in the town of Newburg, N.Y., and purchased by Dr. John C. Warren, Professor of Anatomy in Harvard University. It is the most complete, and perhaps, the largest ever met with. The bones contain a considerable proportion of their original gelatine, and are firm in texture. The tusks, when discovered, were ten feet long; but the larger part of them had decomposed, and could not be preserved. The length of the skeleton was twenty-five feet, and its height twelve feet, the anchylosing of the last two ribs on the right side affording the comparative anatomist a true gauge for the space occupied by the intervertebrate substance, so as to enable him to form a correct estimate of the entire length. Dr. Warren gave me an excellent daguerreotype of this skeleton for Mr. Clift,* of the College of Surgeons in London.

After providing his treasure a relatively permanent resting place in the back of his town house on Chestnut Street, Dr. Warren proceeded to exhibit it to the public. Unprepared for its enthusiastic reception, he reported in his journal:

February 10, 1854. Went to the mastodon room to meet the audience of President Hitchcock's** lecture, to show the mastodon. Some one or two hundred came. They seemed very much interested, particularly the cadets, who predominated. I passed three-quarters of an hour in explaining: the audience were very attentive. The crowd being dense, they squeezed the mastodon badly; tumbled down one of the tusks, and compelled me to order out the other.

*William Clift was John Hunter's assistant. He later became curator of Hunter Museum in London.

**Edward H. Hitchcock was professor of chemistry and natural history at Amherst College.

They also trod down an ancient tusk, and broke it. Many of them made their way into the dissecting room, and amused themselves with looking at the relics of subjects. After two hours, I succeeded in discharging the audience, who retired reluctantly, and with many thanks; some of them stealing little bits of the mastodon tusks.

Perhaps this experience somewhat dampened Dr. Warren's educative zeal.

Dr. Warren also became intensely interested in adding other specimens of the animal, both American and European, to his collection for purposes of comparison. He also corresponded with Professor Jean Jacques Kaup to secure casts of all the specimens that Kaup had discovered not far from Worms, Germany, namely those of the *Mastodon long nostris* (long-jawed mastodon) and the *dionotherium giganteum* (terrifying giant beast). One of his particularly valuable acquisitions was the superb head of an old bull mastodon found near the Shawangunk Mountains, N.Y., and hence known as the "Shawangunk head." This is one of the largest, if not the largest, bull mastodon heads ever found.

In his latest years, much of the "professional austerity" of this hard-driving, pedantic New England scholar diminished, and when Dr. Warren went to meet his end, some of his "pleasant social qualities, overlaid for a time by the weight of severe occupation, found their spontaneous expression." As his friend Dr. Oliver W. Holmes describes:

These last years of his life have softened all our recollections of his strenuous years of toil. He had got out of the brawling current; and, as he neared the further shore, a quiet eddy carried him far back towards the fountains of his youth. A kindly old man; full of pleasant anecdote; busy with ingenious speculations; loving Nature always, and studying her, not as once in the fearful shapes in which she used to challenge his skill, but under the buttressed ribs of his huge mastodon, or hanging over the sandstone tablets where the life of the eternity that is past has left its earliest autographs — he pursued his cheerful labors to the last, bent, but not broken; and so walked softly from among us into the land of shadows.

After his death, the mastodon remained in the hands of his heirs until the decease of the last of his immediate descendants, since Dr. Warren had entailed his natural history collection. In 1906, Dr. Thomas Dwight, Parkman Professor of Anatomy at Harvard, offered the Warren collection to Henry Fairfield Osborn of the American Museum of Natural History. J. Pierpont Morgan purchased the mastodon for \$30,000, six times its original cost, and donated it to the museum. There it remains today.

When the skeleton was disassembled, Osborn wrote: The first question which arose in our minds was whether it would be possible to remove the black varnish; this was answered through a series of experiments which resulted in the con-

struction of special vats large enough to contain the longest and broadest bones, such as the thigh bones, the hip girdle, and the skull. Many weeks in immersion in pure benzine were necessary before the black varnish began to dissolve. This treatment was followed by vigorous scrubbing with pure spirits of alcohol, and one by one, the bones emerged from this prolonged and very expensive bath in all their purity and beauty of color.

In packing the skeleton, the mastodon's new owners discovered enough fragments of the original tusks (Dr. Warren had fitted the skeleton with papier-mâché ones) to completely reconstruct them, a feat which later enabled the Museum to discover the age of the animal by the number of the growth rings along the tusk. Dr. Warren's mastodon, which roamed the earth 30,000–40,000 years ago, was 30 years old when he sank into his marl bed near Newbury, N.Y.

Dr. Warren's curious shift of interest from ether to mastodons can only be explained in light of the physician's long preoccupation with the life process. As evidenced by the serpent on the caduceus, natural history and medicine have been entwined since pre-history. Beginning with the scientific revolution, the medical schools maintained an interest in natural history; *materia-medica* was based on botanical knowledge, and physiology on biological knowledge. Boerhaave held the chair of botany and medicine at Leyden; Linnaeus was a physician; the great, self-trained John Hunter collected a vast private museum of comparative anatomy specimens; and even Darwin, whose theories helped establish biology as a separate science, went to medical school.

In the rapidly growing cultural centers of the young United States, especially in Charleston, Philadelphia, and Boston, many physicians were amateur naturalists. Warren had been trained in London under Astley Cooper, prominent surgeon, comparative anatomist, and student of John Hunter. In Boston, the Boston Society of Natural

History was dominated by such competent physicians as Jeffries Wyman, David Humphreys Storer, Walter Channing, John Ware, George C. Shattuck, and Samuel Cabot, Jr.

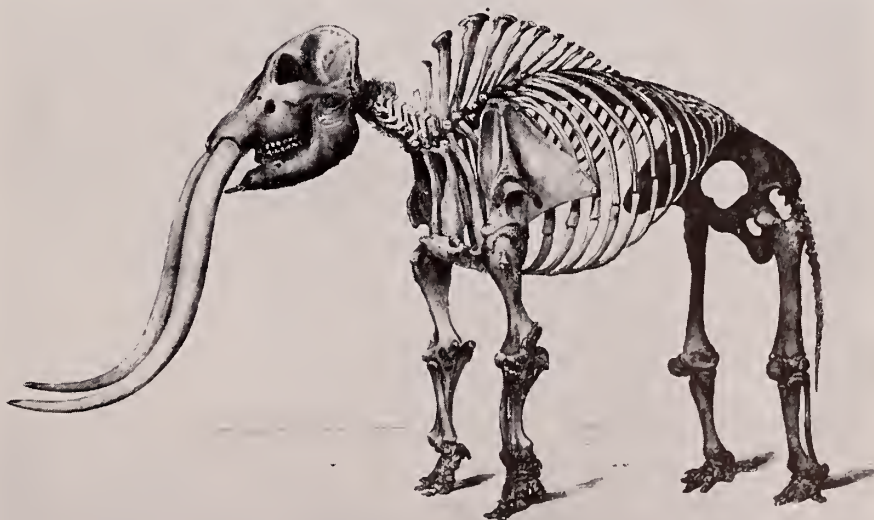
John Collins Warren's closing paragraph of his *Mastodon Giganteus* might well be a summary statement of the principles of these pre-Darwinian naturalist-physicians.

... we must content ourselves with the hope that those who follow us may gradually discover the secret springs which have regulated, and will continue to regulate, the extinction of ancient, and the production of new, species of the animal creation.

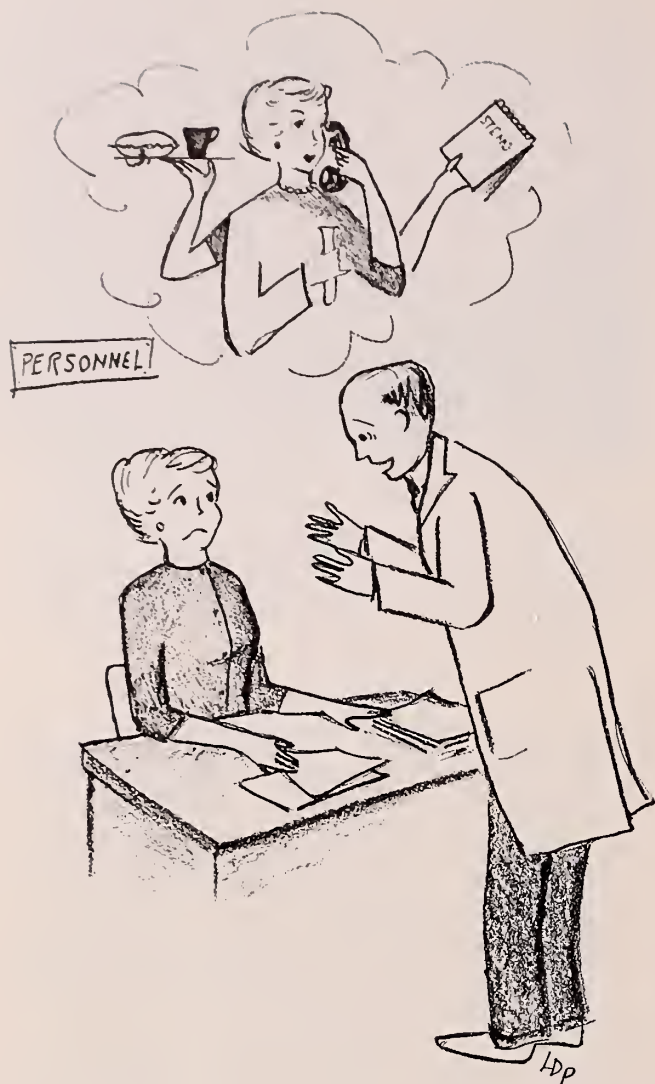
The subject is one of the highest interest, and is well calculated to elevate our ideas of the Almighty Being, who, as it were before our eyes, yet in a way unperceived by us, is able to accomplish incessant changes in the animal creation, by which countless individuals and species are disappearing, and others are rising to supply their places.

REFERENCES

- Hindle, Brooke, Chapter III, "The Doctors: Naturalists and Physicians," *The Pursuit of Science in Revolutionary America, 1735-1789*. (Chapel Hill) 1956, pp. 36-58.
- Lyell, Sir Charles. *A Second Visit to the United States of North America*. (London: John Murray) Vol. II. pp. 363-364.
- Osborn, Henry Fairfield, "Mastodons of the Hudson Highlands," *Natural History*, Vol. XXIII, Jan.-Feb., 1923, No. I.
- Osborn, Henry Fairfield, *Proboscidea*. (New York: American Museum Press) 1936.
- Smallwood, William Martin, *Natural History in the American Mind*. (New York: Columbia University Press) 1941.
- Warren, Edward. *The Life of John Collins Warren, M.D.* Vols. 1-2 (Boston: Ticknor & Fields) 1860.
- Warren, John Collins. *Mastodon Giganteus*. (Boston: John Wilson and Son) 1852, 1855.



This is the Warren mastodon engraved on the frontispiece of *The Mastodon Giganteus*.



Alumni? Help!

When you ask some people to give help, a strange, faraway look comes into their eyes, and one wonders if their hearing is all it should be, or whether they think your request inordinate, impertinent, or a joke. While others, of course, heed cries of distress, answer the call immediately, take up the cudgels, and battle their way through causes with the aplomb of a West Point strategist.

Now we need *your* help, because Harvard Medical School, Harvard School of Public Health, Harvard School of Dental Medicine and our affiliated hospitals are all searching for some very special people; we think you can help us find them.

We need bright young ladies who have a B.S. or a B.A. degree with chemistry and biology, who would like to become assistants in one of our many research labora-

tories. The benefits are outstanding, and the atmosphere is informal and stimulating.

Perhaps your own daughter would be interested to know about this? It might intrigue her to work for pay where once you worked for honors. (No doubt you have told her about us?)

If a career in basic sciences does not interest her, we have opportunities in the administrative offices of the schools and hospitals, where intelligence and good typing are necessary qualifications, and where the "men in white coats" both demand attention and command respect (remember?) from the good Girl Fridays.

If your daughter is in college now, her placement director will be able to help her, although Mrs. Marcia Kinslow, personnel officer of the

Harvard Medical School Area, canvasses the colleges every year and would be delighted to talk to any undergraduates interested in coming to Harvard. Your daughter can sign up for an interview or write to Mrs. Marcia Kinslow, 25 Shattuck Street, Boston 15, Massachusetts. Most of our openings occur in July and September, but applications can be made any time.

Incidentally, if you are ever speaking to college groups, perhaps you would drop a hint about our needs and opportunities.

Editor's note: The Bulletin office has had many inquiries about the young occupant sitting in Dr. Langdon Parsons' chair (on page 40 of the Bulletin's Christmas issue). He is Allen C. Clermont, son of Mr. and Mrs. Gerald H. Clermont. His father is Class of '65.

CARING FOR THE PATIENT*

by Herrman L. Blumgart

In gathering today to hear Dr. Herrman Blumgart, we are paying tribute to a career of singular dedication and consistency. If you have not known him before today, I am sure you are impressed with the brief biography printed on your program. It tells of his training here at Harvard Medical School, of his early research at the City Hospital, of his call to the Beth Israel in 1928, his ascendance during the period of growth in the 1930's, his eventual appointments there as physician-in-chief and chief and full professor of medicine, and of his continued service to the present, now as professor emeritus. Only his trips to India and the Far East for several years during the war and once again in 1959 for the Rockefeller Foundation have interrupted this work.

But these few facts are a mere sketch of his real career, which is a truly exciting chronicle of achievements too numerous to mention in detail. His research, which began so successfully when he devised a clinical method for measuring circulatory velocity by injection of radioactive salts into the arm, has been a continuing passion. He has concentrated on normal and pathologic circulatory physiology, and has published over 130 papers on subjects such as angina pectoris, heart failure, and injection studies of coronary circulation.

Much could also be said of his personal role in building the Beth Israel Hospital into the superb community medical center that it is today, of how his judgment and high personal standards were in large part

*The George W. Gay Lecture upon Medical Ethics was presented at the Harvard Medical School on November 26, 1963.

responsible for drawing together a fine house staff, and how his imagination quickened every phase of its expansion.

His Indian friends all remember him for his professional generosity in helping them establish medical intern and residency programs in their country, and for his personal generosity and hospitality to them as visitors here in Boston.

Many classes of Harvard Medical students will long remember his traditional first-day freshman clinics, when before we had even opened Gray's Anatomy we were addressed as professional colleagues. Dr. Blumgart led our class through the mysteries of heart block to the triumph of the pacemaker in one short hour. In that hour, Dr. Blumgart very early and very subtly created for us an image of the fine balance between scientific knowledge and clinical acumen which we all hope to achieve in our own practice.

But in recent days I have found, from talking with those who know him well, with those who have worked with him for many years, that his true greatness lies not in this dramatic biography, nor in his numerous scientific achievements, but in his radiation of a whole constellation of personal qualities that few men are blessed with. This is the most significant part of my short introduction: combining a keen vigorous mind with a firm and gentle manner, a lively teacher and a devoted scientist, but above all, and at all times, a gentleman as if by instinct, Dr. Blumgart is truly beloved by the Harvard Medical Community. His theme today will be "Caring for the Patient;" mine has been "Caring for This Doctor." Our presence here today is in itself sufficient testimony to this.

It is a great honor to introduce Dr. Blumgart as the Gay Lecturer for 1963. — MICHAEL M. STEWART '65
President of the Third Year Class

+ + +

It is an honor and a privilege to be the fortieth George Washington Gay lecturer. Having determined with all the strength of a weak man not ever to speak on a general subject, I surrendered readily to the charming persuasion of the student committee reinforced by Dr. Berry and Dr. Gardella. The annual selection of the Gay lecturer will, I hope, be continued, for in this outspoken era it is pleasant and reassuring to know that at least once a year, faculty and students are in agreement and a spirit of harmony prevails, however momentarily.

In choosing the title "Caring For The Patient," I bear in mind the closing sentence of Dr. Peabody's poignant Gay Lecture, when he stated, "The secret of the care of the patient is in caring for the patient." A secret Webster defines as information revealed to none or to few. It might be considered audacious of me to probe this secret, were it not for the fact that Francis Weld Peabody was my mentor in my fourth year clerkship, in my first published research, in my internship, and later my chief at the Thorndike Memorial Laboratory. After all, teacher and student, student and teacher form an endless chain down through the years. For me, as for everyone who knew Francis Peabody, it can be said — "something of him will be a part of us forever."

Caring for the patient encompasses both the science and the art of medicine. The science of medicine em-

braces the entire stockpile of knowledge accumulated about man as a biological entity. The art of medicine consists in the skillful application of this knowledge to a particular individual for the maintenance of health or the amelioration of disease. Thus, the meeting place of the science of medicine and of the art of medicine is the patient.

In recent years, repeated outcries are being heard that the science of medicine has so engulfed physicians that they are no longer interested in the patient as a person. The patient, it is said, knows how he feels but doesn't know what he's got — while the doctor knows what he's got but doesn't know how he feels. Fascination with the disease, it is contended, has excluded compassionate regard for suffering or concern with the bearer of the disease. The milk of human kindness has been curdled by molecular biology. We are producing a robot generation of milliequivalent practitioners.

In defense of molecular biology and, indeed, the broad, scientific approach to medicine, certain brief comments are in order. Somewhere between 1910 and 1912 in this country, according to one sober medical scientist, Lawrence J. Henderson, a random patient, with a random disease, consulting a doctor chosen at random had, for the first time in the history of mankind, a better than 50-50 chance of profiting from the encounter. Since then, the great advances in science have revolutionized our way of life. That the average life expectancy has increased from 63 to 71 years in the past 20 years is due to scientific progress — not to the dawn of greater compassion. Three million Americans who are alive today would be dead, were it not for these advances of the past twenty years.

To acknowledge the triumphs of medicine is not to denigrate the ministry of medicine. The science of medicine and the art of medicine are not mutually antagonistic. On the contrary, they complement each other; together they constitute a continuum in the service of mankind. It is of more than historic interest in this connection that many great scientific contributions have been achieved by practitioners who apparently conceived society as a whole to be their patient; Harvey, Withering, Koch, Jenner, Morgagni, Auenbrugger, Laennec, Bright, Laveran, MacKenzie, Banting, Minot — to name but a few.

Without scientific knowledge, a compassionate wish to serve mankind's health is meaningless. But scientific knowledge without wisdom is a frozen storehouse. Scientific knowledge is more readily taught, whereas the application of knowledge at the bedside is largely a function of sagacity inherent in or personally developed by the individual physician. That the science and the art may be combined was felicitously expressed by the Harveian orator of the Royal Society of Physicians, 277 years ago in 1686, when he said of William Harvey, "He practiced medicine with such grace that he seemed to have been *born* with the skill rather than to have learned it."

We have our contemporary William Harveys, who seem *born to care* for their patients, inspiring complete confidence by their devotion even at the beginnings of their medical careers. A few years ago I implored a patient on our wards to undergo subtotal gastrectomy to combat repeated almost fatal gastric hemorrhages. He steadfastly refused. After ward rounds I visited him again and informed him of the unanimous judgment of our chief gastroenterologist, our surgeons, and myself. Again, a crisp "no." Finally he replied, "I'll let you know my decision tomorrow morning after I talk this over with

my own doctor." When he gave me his affirmative answer the next day, I asked him the name of his doctor in whom he had such complete confidence. I discovered it was the fourth year clinical clerk we had assigned to the case.

To combine the science and the art of medicine at the bedside and to weigh the evidence and to decide wisely are ever more difficult. As science progresses, the interests of the investigators become narrower and narrower, whereas the scope of the clinicians must become broader and broader.

Our increased knowledge confers increased power; increased power provides greater dangers along with the great benefits. This is a prevalent characteristic in many aspects of our modern society, as exemplified by atomic energy with its threat of total annihilation, by the increased highway fatalities related to high speeds, by aviation hazards, by the annual use of 350 million pounds of pesticides that are both a blessing and the cause of death and "Silent Spring."

In medicine, along with the blessings of progress or perhaps by virtue of these advances, we possess heretofore unknown power to manipulate the chemical composition of the intracellular and extracellular environment. Never has our responsibility in the use of such powerful agents been so great. Despite our vigilance, we are inevitably ignorant of all the potentialities of drugs for good and evil. The recent past illustrates how we may inadvertently inflict illness and even death. The grim tragedies of thalidomide, chloromycetin and aplastic anemia, and yellow fever vaccine with its thousands of cases of hepatitis (although this misfortune in turn opened up new vistas in our understanding of the latter disease), are but a few examples. With approximately five hundred new drugs per year entering the market, the problem confronting physician and patient grows apace.

Even the most commonly used agents such as quinine, digitalis, the thiazides, and the hormonal agents, i.e., thyroid, insulin, steroids, and progestins, carry considerable risk. We can standardize drugs, but we cannot standardize patients. Caring for the patient demands adjusting the drug to the unique characteristics of the individual patient. The prevalence of untoward effects in everyday practice has been vividly portrayed by several studies. In one of the leading teaching hospitals, a record was kept of unfortunate sequelae and accidents attributable to accepted and well-intentioned diagnostic and therapeutic measures; major toxic reactions and accidents were encountered in five per cent of the patients. A particularly well-documented study is the excellent treatise aptly entitled, "Diseases of Medical Progress," by Robert H. Moser.

In caring for our patients, we must ever try to be certain that the expected benefit of a particular procedure outweighs the definite risk. At one end of the spectrum is the increasing number of investigations that either confer little or no conceivable benefit to the subject undergoing hazardous examination. Specifically, I refer to such studies as the catheterization of the urinary tract of healthy female babies in a foundling home to establish the identity of normal bacterial flora, cardiac catheterization and coronary angiography of normal subjects with inadvertent production of myocardial infarction, the production of unconsciousness and convulsions by a combination of Valsalva maneuver and forced hyperventilation in normal volunteers, in order to study the CO₂ tension and electroencephalogram.

The disconcerting current increase and general sanc-

tion of such studies, reflected in articles in leading medical periodicals, are, I believe, a by-product of the contemporary ascendancy of science and can best be understood in the light of historical perspective. In the pagan philosophy and religion, the question posed by natural phenomena was, "Why do they happen?" Natural phenomena were ascribed to jealousy or vengeance of the gods. The Greek philosophers first established for mankind the question "How." They did not ask *why* an object fell to the ground, but rather meditated about the "how" of gravitational force. To be sure, they worshipped their pagan gods, but they simultaneously observed and recorded natural phenomena as events of external reality. These were the first records of the signs of disease — the beginnings of medical science as we know it today.

It is believed that Hippocrates, the first scientific physician, was active in the separation of medicine and religion by differentiating the roles of the doctor and the priest. In this separation of religion from science, ethics became identified with religion. Science was concerned solely with description of nature and the *how* of events; in so doing, "pure science" prided itself on its nonethical and amoral character.

This tendency of science to consider its mission solely to increase knowledge, regardless of the use to which it is put, has been implicit in many scientific articles. The fact, however, that social and ethical considerations must ever be kept in mind, has rightfully aroused the public conscience and protests against human vivisection. The thesis that science itself contains within its domain social values and social responsibilities requires reaffirmation. Science pursued for its own sake, solely because of consuming curiosity, has yielded rich rewards, but it always must be referred back to humanistic criteria. Otherwise, we would deal only with a world of computers and automation in which efficiency would be God, and human welfare and the good and the beautiful would be wholly submerged and forgotten.

The issue is not simple. There are many problems requiring thoughtful study, including the meaning of "informed consent" of volunteers, the analysis and meaning of "The Nuremberg Code for Permissible Human Experiments," and the criteria of editorial responsibility in the publication of results.

The immediate need is study, discussion, and formulation of policy. An excellent example of what can be accomplished in defining certain practical and philosophical problems is the directive of 1958, "Rules Governing the Participation of Medical Students as Experimental Subjects" — a program forged after several years of study at the Harvard Medical School under the wise guidance of Dr. Berry.

In all this, let us never forget that we are all engaged in the practice of medicine, whether directly at the bedside of the patient, or indirectly in the research laboratory or in administration at medical schools or hospitals, in order to create the environment favorable to productive scholarship and better patient care.

It is appropriate here that we discuss aspects of caring for the patient that involve the individual doctor-patient relationship. In caring for his patient, it is commonly believed that a physician should exercise sympathy. One cannot fully appreciate the problems of others, it is said, unless one can put himself in another's place. But we ought to consider exactly what we mean by "sympathy." If we thoughtfully examine the definition of the word "sympathy," we find it refers to an affinity, association, or relationship between things so that

whatever affects one similarly affects the other. The act or capacity of entering into or sharing the feelings of another is known as "sympathy."

I should like to submit, however, as so ably stated by Charles D. Aring, that "entering into the feelings of another and becoming similarly affected may not be the constructive method that has been supposed." To do so involves loss of objectivity, perspective, and leads to feedback mechanisms that may serve to aggravate the fears, the sorrows, and the perplexities of one's patient. These considerations were epitomized for me by an unforgettable experience during my fourth-year clinical clerkship under Dr. William Henry Smith of the Massachusetts General Hospital, a distinguished teacher known affectionately as "Big Bill Smith."

The patient assigned to me had, I believed, Addison's disease, for which no effective therapy was known. I prepared my presentation for rounds through much of the previous night and navigated quite smoothly through the bedside presentation of the history, physical examination, and the laboratory data, such as they were in those days.

"What is the principal problem of your patient with Addison's disease at *this* time?" I was asked. To which I replied, "excruciating pain due to throbbing abscess of the jaw beneath a carious tooth." When asked what should be done, I advised surgical drainage.

"Don't you know that sudden death is possible during surgery in Addison's disease?" asked Dr. Smith.

"Yes," I said, "but the pain is severe."

"Well, wouldn't you feel badly if your patient died during surgical drainage?"

"Yes," I admitted, "I would feel very badly."

"Well then," he said, "you ought to leave medical school this instant and abandon the profession of medicine. If, after giving all of your time and energy, and to the very best of your ability having weighed the risks and benefits, you grieve over ill fortune, your life will be tormented by the past, and you will be of little use to your patients in the present or to yourself in the future. To each and every patient you must give your best, and, having done so, you must accept with equanimity bad fortune as well as good. Unless you learn this, you had better not be a doctor."

I realized then, as now, that this was to some extent a pedagogical overstatement, but hardly a day has passed that I have not recalled the lesson.

"The physician able to determine his emotional boundaries, that is, where he leaves off and where someone else begins, and who does not indulge completely in the other's emotional problems, functions more usefully, happily, and gracefully." This statement is not to advise remoteness, lack of understanding, or callousness. Indeed, knowledge and maintenance of one's identity and acceptance of self are essential. Emotional appreciation of the patient's feelings, without becoming engulfed by them, is of paramount importance. This attitude has been aptly denoted by the term "neutral empathy." "Compassionate detachment" is, perhaps, more precisely descriptive. One enters into the feelings of one's patient without losing an awareness of one's own separateness. *Appreciation* of another's feelings and his problems is quite different from *joining* in them and is different from *ignoring* them. Once having achieved "neutral empathy," a physician will have attained maximum freedom to act for the patient's greater benefit. To function independently in this manner demands, above all, inner security, full knowledge of one's self,

and self-acceptance. These in turn require a way of life epitomized by one of our great physicians, as follows:

I have had three ideals; first, to do the day's work well and not to worry about tomorrow; second, to act the golden rule, as far as in me lay, towards my professional brethren and towards the patients committed to my care; and third, to cultivate such a measure of equanimity as would enable me to bear success with humility, the affection of my friends without pride, and to be ready when the day of sorrows and grief came to meet it with the courage befitting a man.

Such goals are not easy objectives, but in lesser or greater measure, each of us in his lifetime can strive toward them.

Each illness constitutes an emotional crisis for every patient, and his eventual health will depend not only on his physical but also on his emotional recovery. It is important to recognize the different needs of different patients, according to their individual personalities and requirements.

Before considering these different needs, it is important to bear in mind those qualities that all patients require in common of every physician. They must be convinced their physician is scientifically competent, and wise in his judgments and decisions. He must be interested in the disease, but at least as important, he must be equally concerned with them as persons. When you sit with a patient to write down his present illness, you are engaged in one of the most intensely personal experiences in clinical medicine — you are learning his habits, his fears, his hopes. There are two techniques in taking a history; they have two different objectives. The first of the two may be termed the cross-examination technique. "Do you have pain in the right upper quadrant? — How long does it last? — Is it sharp, dull, constant, or colicky? — Where does it radiate? This technique has as its object the accurate identification of the hallmarks of organic disease.

The other technique is the listening technique. This technique enables the patient to relate his experiences in terms of his own values and concerns. It frequently enables us to understand more clearly the meaning of the illness to the patient and aids us in understanding the patient as a person. By permitting the patient to relate freely what is uppermost in his mind, he is likely to verbalize those experiences that are, to him, of the greatest emotional significance. In describing his symptoms in detail, the patient transfers to the physician the material that has been the focus of his anxiety: in a very real sense his anxieties become the doctor's problem rather than his own.

These two techniques are not wholly separate; frequently, they overlap and merge; always, they supplement each other in our understanding of the disease and of the person.

Each symptom has a beginning or onset. It also has its course which we call the clinical course. It has a life history of its own. And also, to be sure, each person has a life history of his own. But you will not know the person and you will not know the disease unless you know both, and thereby understand the intimate interrelationship that exists between the life history of the individual and the life history of the signs and symptoms of disease. The quality of the history reflects the competence of the physician. After some years, the process of

history taking becomes almost unconscious, or, at least, an unself-conscious process.

It is of interest to reflect on the essential nature of history taking and some of the qualities that determine its excellence. The component of history taking directed toward elucidation of the disease process is more than a mere chronicle of events. It has much in common with the discipline of historical science. As Walshe stated in his Linacre Lecture in 1950:

We are in fact seeking to collect a record of past events that for us are not sense data, but things that have happened not under our eyes; things that, more often than not, we cannot submit to any process of scientific verification.

Out of the myriad of episodes often subjectively colored and interpreted by the patient, the physician selects, discards, analyzes, and assembles data in the light of his appraisal of the patient as a witness and his own accumulated experience and knowledge of medicine. Similarly, the professional historian is concerned with human actions that lie in the past, though they may have their consequences in the present. His evidence is the written record to which he applies a critical judgment, based on his experience, using those processes of selection and assembly that are also the essence of clinical history taking. The historian is not concerned with simple events as such, but attempts to discern beneath their external sequence their innermost meaning in terms of the social, economic, and cultural forces operating at the time. So it is with clinical history taking and particularly with the formulation of the present illness. In recording the findings, lucidity, conciseness, and precision in thought and expression are indispensable.

Parenthetically, it is of more than passing interest in this connection to note that much of the debate as to whether psychiatry should be regarded as a science may have been due to the fact that many have tried to force it erroneously into the mould of the natural sciences rather than the field of historical science.

In the instance of some diseases such as angina pectoris, the history is of cardinal importance in diagnosis. Approximately one-third of all angina pectoris patients have normal findings on physical examination — including heart size, heart sounds, electrocardiograms and blood pressure. Most of the other two-thirds of angina pectoris patients have abnormalities in electrocardiogram, blood pressure or physical signs observed in other patients of the same age who do not have angina pectoris. The diagnosis hinges on the skillful history. As some of our wisest clinicians have said, "Listen to the patient's story, he is telling you the diagnosis."

The helpfulness of this dictum was illustrated by an experience I had three years ago. One of our brilliant women medical students was taking her oral honors examination. Her scholastic record was so outstanding that our sole question was whether she should receive a *cum laude* or a *magna cum laude*. We therefore assigned a patient with a particularly difficult diagnostic problem and were amazed when she again appeared before us within the hour, supremely confident of the correct diagnosis. I asked her how she had arrived at this diagnosis, to which she replied that she remembered my good advice on ward rounds to "listen to the patient, he is telling you the diagnosis." She had walked up to the patient and in kindly, sympathetic terms, had softly asked him, "What troubles you?" His reply was "pheochromocytoma!"

All of which is a reminder that we teachers are taught more than we teach.

As you talk to the patient reviewing his past history, his family and marital history, you will learn much about his relationship to his brothers, sisters, his role in the family, the repercussions of these relationships on his own personality and indeed on his disease. Every "medical history" is a revealing portrait of the man as well as of the illness. Of particular interest may be the onset of illness in friends or other members of the family after the first symptoms appeared in the patient. Not infrequently incapacity or death from a gastric disorder in one member of the family leads at that time to the onset of similar symptoms in others in the group. These often can be allayed by the report of normal findings on physical examination. In some instances, radiologic examination or other laboratory tests also may be necessary to reassure the patient, particularly if the original diagnosis was made only by means of such procedures.

Practically each and every item in the cold, stereotyped case history outline affords additional insight into your patient as a person. With experience you will form certain prejudices, and since we all feel that our own prejudices are rightful prejudices, we begin to act in accordance with them. The occupation of the patient, for example, may be of great importance. A lawyer in the presence of his physician may assume the position of being a judge. If you are the patient's doctor, you must petition him as a barrister and plead your arguments logically for the diagnosis and for the program of your recommended treatment, hoping to win an affirmative verdict. Accustomed to self-reliance and the management of affairs, he may require continuation of this role to allay his anxiety. At times, as I shall shortly illustrate, you may ease his task by offering only the affirmative evidence. This is also true of many of us *doctors* when we become ill. We refuse to abdicate our role as physicians; we too often insist on being the final arbiter in all decisions.

One of my most eminent surgical teachers was a doctor of this type — I was always amused by the fact that physicians and attendants lasted only a very short time in attempting to treat the incapacitating arteriosclerosis of his legs. But one doctor survived an extraordinarily long time; in fact, almost a year. I once asked him, "how do you manage the professor — doesn't he buck you all the time?" "Oh, no," he said, "it's very simple. If, for instance, I want to apply alternating pressure and suction therapy to his leg, I have one of my assistants gather from the library all the articles that favor that particular therapy. I then go into the professor's room and talk over all manner of things. Just before I open the door to leave, I say, 'Dr. Johnson, I think you might be interested in some of the articles I have read recently relating to alternating pressure-suction therapy applied to arteriosclerotic conditions of the leg. I should like to know your opinion on this new therapy.' By choosing, of course, only those articles favorable to the treatment, five or ten volumes would be produced, and next week on one of the visits, Dr. Johnson would say 'You know, I've read those articles. They are fascinating. What do you say we try it?'"

One frequently hears, "Well there is the problem of time. We are too busy ascertaining the fundamental organic status of the patient to probe into his personality and ascertain the kind of person who has the disease." My reply is clear. In the first place, unless we know the person, the diagnosis will frequently be incomplete

or inaccurate. In the second place, if we try to learn about the person with the disease from the very first moment we meet, it will take very little more time, and in some instances no more time than the usual trite narrow approach to the patient. In the third place, your treatment may not be effective. And lastly, you will be missing one of the most fascinating and rewarding aspects of our profession.

I do not mean to imply, of course, that when a man enters the hospital *in extremis*, with pulmonary edema or paroxysmal dyspnoea due to myocardial infarction, you rush up to him and ask him about his grandparents — you must exercise common sense. As he traverses his clinical course, his inevitable anxiety will be ameliorated by your devotion to him in his loneliness and by your explanations of the nature of his illness and the rationale of his treatment. In these may often lie the decisive difference between death and recovery. Included in such a discussion of the rational approach to his disease may be the value of medication in strengthening the heart beat, the favorable action of oxygen in easing respiration, and the importance of rest in releasing the heart from strain while the intercoronary collateral circulation develops and promotes recovery of damaged heart muscle.

Some physicians, fortunately fewer and fewer, are too prone to label many patients with emotional difficulties as neurotic and advise psychiatric consultation. To do so is to abdicate one's role as physician. In an era that takes pride in the study of function and the elaboration of functional tests, it is narrow-minded to limit one's interest to those disturbances based on recognizable anatomical abnormalities. Emotions exert force, and thought itself has its electrical counterpart. As Claude Bernard observed, thought bears the same relation to the brain as time does to the clock.

The modern emphasis on "psychosomatic medicine" is encouraging as to intent. But insofar as it denotes something new and apart from medicine, it is a retrogressive concept. For all of medicine is psychosomatic. Just as there can be no disease without a patient, there can be no organic disease without emotional reverberations. Nor can there be emotional upheavals without bodily representation. The extent to which each of these two factors is operative, and an estimate of their relative importance in each patient, is essential to accurate diagnosis and successful therapy.

Approximately one-half of the patients who will consult you will have no organic disease or only minor disorders. The other half may have engulfing catastrophe such as acute myocardial infarction, malignancy, or serious metabolic disorders such as diabetes mellitus that may pose equally devastating emotional problems. And there is the middle group that require your professional judgment to determine in which half the patient belongs, i.e., whether the pain in the chest is tuberculosis or angina pectoris; whether the nausea and heartburn are due to gastrointestinal malignancy or cholecystitis, or perhaps, merely, to a person who makes him "sick in the stomach." Or, in this middle group, you may find the young woman of 20 who experiences lassitude, chronic fatigue, and loss of weight, having assumed, unaided, within a few years the responsibilities of wife, household, and two children — plainly the syndrome of "mother insufficiency." The experience of one of the leading rehabilitation centers is instructive. All 631 patients who were undergoing rehabilitation because of disabling heart disease were re-examined by a team of

outstanding cardiologists to ascertain the degree of effort these individuals could undertake without harm. Some 175, or 28 per cent, of the patients were found to be wholly normal! They were disabled not by heart disease but by the fear of heart disease instilled in them by a false diagnosis of heart disease.

One of the many lessons of this experience is that every diagnosis of a psychological, psychiatric, or organic disorder should be founded on positive data. There is nothing more dangerous than the diagnosis based on exclusion. In all these categories we can rehabilitate our patients and abolish their disabling symptoms most successfully only insofar as we understand their fears and anxieties. Valuable insights are afforded by acquaintance with psychoanalytic literature and, indeed, by acquaintance with literature in general. I personally believe there has been too much emphasis at times on the extremes of therapy — lobotomy, electric shock, psychoanalysis. While each has a definite role in the treatment of specific groups of patients, preventive psychiatry in the everyday treatment by the practicing physician offers the greatest opportunity for helping the greatest number. On occasion, when the emotional problems are refractory to treatment, are complex, or of ominous portent, the aid of a psychiatrist must be sought. By reserving the skill of psychiatrists for major problems, their special competence will be more effectively employed. We can learn much from their expertness and wisdom in these situations. They have much to teach us.

In practice, one's conduct will be adapted to the specific needs of the particular patient. Firmness, deliberateness, kindness, and encouragement, are supports that are frequently of greater importance than the choice of sedatives. In other patients, particularly those who are not so fortunate in their choice of parents, who have been accustomed to an authoritative, autocratic head of the family, a more severe and positive attitude is necessary. They require and relax under authoritarian management. Such patients may be disquieted by explanation. Explanation by the physician may be misinterpreted as indicating uncertainty on his part.

Less dramatic but equally important is the day-by-day treatment of patients whose distress is not life-threatening but nevertheless causes pain or anxiety. At one end of the spectrum is the querulous patient who utilizes his symptoms to attract the personal attention, comfort, and sense of importance that he is unable to obtain in other ways. This is the patient who is characterized by some internists as "the patient who has nothing the matter with him." The fallacy of this point of view is perhaps best illustrated by the opposite dictum, as you have all doubtless heard, of the psychiatrist who brightly informed his patient, "I have good news for you — there is nothing wrong with you — it's all in your body."

Every physician encounters patients of this type, who require continuing, multiple, subjective complaints as a necessary ingredient of their lives and need life-long, repeated reassurance. They usually are not suitable candidates for psychoanalysis, lobotomy or electric shock. It is essential that the physician recognize that the production of symptoms is part of the sustenance of life for such patients and that the continued production of symptoms is not a reflection of his own incompetence or inadequacy. Recognizing this, a physician often can be the support that enables such a patient to walk successfully through life. The patient is released from some of his anxiety, feels secure despite his continued inner turbu-

lence, and is confident that any organic disturbance requiring specific treatment will be identified.

Now, in all this, while we observe and try to understand the patient, we must remember that *he* is observing and evaluating *us*. As John Donne remarked in his "Devotions" in 1603, some 360 years ago, "I observe the physician with the same diligence as *he* the disease." Unknowing and unskilled in matters medical, the patient can judge only by the familiar hallmarks of his own experience. He notes whether his physician is like the surgeons of medieval times who washed their hands only once — after the operation was over. The patient observes whether the physician places the stethoscope over the mitral area, seems to lose himself in reflection, and then reapplies and reapplies this instrument. After several such reapplications the patient surely ponders the meaning of this stammering performance by the physician with a wandering pacemaker. If the physician then emerges from his reverie and proudly announces "everything is normal," the patient may well experience the same perplexity as the traveller visiting Hong Kong who beheld this somewhat disconcerting sign displayed by a hotel on the water front: "Stay with us — we overlook everything."

And, then, there is the doctor with the cold hand and the cold stethoscope. The patient does not regard him as a physician in the true sense of the word. The patient is likely to retreat so far as his chest is concerned, and on abdominal examination the rectus is in spasm, and the liver and spleen are not palpable. He may well be reminded of Webster's definition of a patient as one who "suffers, bears, or endures." The gentleness and care used in examining the patient in regard to his comfort and for his or her modesty are of paramount importance in enabling one to perform an accurate physical examination.

These considerations apply also to one of our most terrible instruments, the blood pressure manometer. The physician who pumps it up, lets it deflate and repeats this successively seven or eight times, hoping to establish some stable measurement but all the while pushing the pressure to higher and higher levels, has discovered one of the best experimental ways to induce a virulent disease responding neither to steroids nor to antibiotics, namely, *sphygmomanometric monomania*.

In caring for the patient, one should carefully weigh one's remarks. The word "doctor" is derived from the Greek word "teacher." As I have indicated, some few patients resent explanation of the nature of their illness. For most, however, knowledge of the nature of the illness and its expected course, explained in kindly and optimistic terms, is comforting. There is no condition so complex that it cannot be explained in simple, intelligible language. To clothe the illness in unintelligible terminology will only increase the patient's anxiety. To tell a patient with severe cardiac pain, "my dear man, you have persistent myocardial ischemia," will not increase his respect and may well cause him to ponder whether presiding over his physician is the nucleus ambiguous. In practically all instances the patient should be told the nature of the ailment, bearing in mind that the actual situation must be painted as a painter paints a picture: different colors must be used in terms of the subjective impression to be conveyed, as a snow scene may be painted various shades of grey or white, or, on a bright sunlit day, as predominantly blue. To tell some patients "You have angina pectoris" may verify the validity of the radio slogan, "Heart disease is the number one killer."

In most patients the discomfort may be explained in terms of relative coronary insufficiency, emphasizing that this is nature's way of warning us to slow down, to avoid danger, and in some instances to desist from strain. The diagnosis of angina pectoris is not to be regarded as the equivalent of a death warrant; indeed much of the important work of the world is carried out by persons with this condition. The average prognosis, in the absence of diabetes mellitus or marked hypertension and with a sensible regimen of life, averages more than ten years — a prognosis that is equal to the general prognosis for life at age 62! Age 62 is also the approximate age of onset of angina pectoris.

Of the many questions regarding what to say — and what not to say — to one's patient, none is more difficult than what to inform the dying patient or the patient with incurable malignancy. I do not believe there is an easy single or uniform reply, but certain considerations afford valuable guidance. The underlying guiding principle is that we conduct ourselves to support the specific needs and strengthen the particular defenses of the particular patient for whom we have accepted responsibility. As Francis Bacon stated, certain patients

Fear death as children fear to go in the dark.
And as that natural fear in children is increased with tales, so is the other.

Such men protect themselves by denial of reality. Not infrequently they have previously said to other members of the family or to their physician, "If I ever have such a condition, I do not want to know it." They may express satisfaction in their fancied improvement even as they waste away. Every physician has observed many such patients who peacefully and calmly pass into eternity, successfully protected from their fear by the barriers they themselves have constructed.

In treating fatal illness such as malignancy, it is our responsibility to maintain the comfort of our patients. Obviously, neither addiction nor euthanasia are considerations. Neither the law nor the tenets of any religious faith require postponement of death or continued suffering by adherence to the usual time schedule of the usual doses of sedatives and narcotics. There is no need for the dying to envy the dead.

How we deal with patients is influenced by their cultural and religious background. A poignant example was Pope John XXIII, who, as he received extreme unction, said to his confessor, "I have been able to follow the course of my death step by step. Now I am going sweetly to my end. I am on the point of leaving. We are going to the house of the Lord." Indeed, all Catholics look upon death as a brief interlude. Similarly, devout Christians, Jews, Hindus, and Moslems, as well as members of other faiths, believe in life after death. For such, as well as others, the plain, unvarnished truth is for them,

One short sleep past, we wake eternally.
And death shall be no more; death, thou shalt die. (John Donne, "Holy Sonnet X.")

I recall another example in a fine old Negro who was at the Thorndike Memorial. He was approximately 69. He had developed progressive congestive heart failure. He could see, and we saw, the inexorable increase in the edema of the legs, swelling of the abdomen, and finally swelling of the arms. At that time the young assistant resident responsible for his care jauntily and very optimistically reported that all was going well;

he was definitely better and everything would be fine. The patient became more and more terrified because in his isolation his sole contact with reality was through his physician, who from the best of motives was telling him the illness was disappearing when he knew he was getting worse. I shall never forget his asking one of us: "Will you tell me, doctor, just what my condition is?" We said to him, "You are a very sick man." He said, "I am going to die, am I not?" We replied, "The chances are against you because we can see you are getting worse. However, we have seen patients as sick as you who, while taking the medicine we are giving, finally recover and have years still to live. We shall do what we can to have you recover, but we must admit that the chances are against you." I will never forget his relief in finding there were one or two doctors he could trust to give him accurate and truthful information. He turned to us and said, "I'm relieved to know just how things stand. Actually, I have had a full and good life and have seen my four children established honorably and successfully." Two days later he quietly entered his dreamless sleep, contented, with equanimity, and without fear.

It is sometimes said that we come into the world alone and that we die alone. Surely, no greater solace can be afforded to some patients than to stand vigil with them as they pass into eternity.

Illness brings many other moments of vast loneliness, none more difficult than the long journey on a flat, hard, uncomfortable stretcher from the ward or room to the operating theater. Never have I known patients more appreciative of a familiar figure than during that anxious trek and during those moments as they lose consciousness.

Now, to conclude. Through all of these experiences in caring for your patients, you will constantly increase your skill and your knowledge. Just as with accumulation of factual knowledge, perfecting your skill and your ability in treating persons will always be an interesting pursuit for the rest of your life. In both fields your grasp will ever be less than your reach. But, if you increase your skill in regard to dealing with the patient as a human being with problems and difficulties, and understand the interrelationship between that person and his disease, you will become better diagnosticians, and, what is more important, you will become better physicians. No physician can ask more of his destiny. Nor should he be satisfied with less.

And so at the end of this discussion of *caring for the patient* we have now come full circle from Dr. Peabody's George Washington Gay Lecture in 1927 only to paraphrase him in reverse — by stating that the secret of *caring for the patient* is, indeed, *to care for the patient*.

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REFERENCES

- Aring, Charles D., "Sympathy and Empathy." *JAMA*, 167:488, 1958.
- Barr, David P., "Hazards of Modern Diagnosis and Therapy — The Price We Pay." *JAMA*, 159:1455, 1955.
- Moser, Robert H., *Diseases of Medical Progress*. Charles C. Thomas: Springfield, Illinois, 1959.
- Peabody, Francis W., "The Care of the Patient." *JAMA*, 88:877, 1927.
- Walshe, F. M. R., "Humanism, History and Natural Science in Medicine." *Brit. Med. J.*, 2:379, 1950.

Editorial

Following is an exchange of letters, on which the Editorial in this issue is based:

Dear Doctor Berry:

At a recent meeting of the American Medical Association in Portland, I had a chance to talk to the President of the Student American Medical Association.

He advises me that there is no chapter of this organization at the Harvard Medical School, and as a graduate of the Harvard Medical School in 1931, I am surprised and am wondering why such a chapter has not been formed.

I have been considerably upset with the book, *Keynes at Harvard*, and hope that there is a substantial conservative element in the University and particularly in the Medical School.

Certainly, I think that the formation of a student AMA chapter would help get medical students off on a more "middle of the road" course as regards free enterprise as opposed to government medicine.

I am very anxious to hear your comments along these lines.

JOHN S. DONALDSON, '31
Pittsburgh, Penn.

Dear Doctor Donaldson:

You are correct — there is no chapter of the Student American Medical Association at the Harvard Medical School, for the simple reason that our medical students have not chosen to establish a chapter.

Our medical students are of course free to belong to, or to organize, any associations, groups, societies and so forth that they wish — provided only that these organizations are legal. The Medical School does not exercise jurisdiction or play a role other than helping the students attain their wishes and pursue their activities as they deem fit — again assuming legality and compliance with usual social custom and good academic tradition.

Against this background, you should know that the SAMA has on several occasions approached our medical students with the objective of establishing a chapter here. For this purpose, SAMA representatives have come to the School and have been accorded every opportunity to explain their organization to our students. In each instance, after carefully considering the matter, our students have voted in the negative: they have not wished to have an SAMA chapter at Harvard.

You explain that you have been considerably upset by the book, *Keynes at Harvard*. It is my personal opinion that you should not be. This volume, a staff study by the Veritas Foundation, has appeared in a revised edition in 1962. In its commentary on the teachings of Keynesian economic theory it is, in the opinion of most of us, biased toward the extreme right. Incidentally, as far as I have been able to find out, Lord Keynes has never actually been in residence at Harvard.

Have you read the biography of Lord Keynes by Seymour E. Harris, Lucius N. Littauer Professor of Political Economy, *Emeritus*, entitled *Maynard Keynes, Economist and Policymaker*, or the new biography (published in 1963) by Professor Hutt of Capetown University, entitled *Keynesism: Retrospect and Prospect?* Because of your obvious interest, you might be interested in the more penetrating view of Keynesian economic theory that is to be had by doing so.

You have little cause for concern in my opinion, based on 15 years of experience as Dean of the Faculty of Medicine, that Harvard's medical students do not pursue a "middle of the road" course as regards the role of medicine in our democratic society. You will realize, I hope, that I am not endeavoring to say that all our students think alike. I can emphasize my delight, however, that the great majority of them take a balanced view, avoiding the extremes at either the left or right — to help them achieve a balanced view, they are privileged to participate in discussions here at the Medical School with distinguished individuals representing all aspects of the complex problems facing medicine in the postwar era in which we are living: the traditional medical organizations, specialized professional societies, insurance, government, labor, etc. Many of those who are good enough to come to the School to participate in student discussions find the going pretty rough — students have a way of arguing with no holds barred. You would find it fascinating to attend some of these sessions, I have no doubt.

Your letter indicates your deep concern for the well-being, not only of your professional *Alma Mater* but of the medical profession of which you are such an important member. I am deeply appreciative of your letter.

GEORGE PACKER BERRY, M.D.
Dean

Dear Doctor Berry:

May I express my sincere appreciation for your taking the time to answer my letter of December 12, 1963, and also enclosing a copy of Dr. Pusey's talk before the National Press Club in December of 1954.

It is evident that you have given very thoughtful consideration of my concern relative to standards of social thinking in not only Harvard Medical School and College, but other Universities throughout the nation.

You indicate that the book, *Keynes at Harvard*, represents bias toward the extreme right. I am not a John Bircher. Still, I cannot overlook the factual statement in the book that the liberalistic Keynes philosophy had well penetrated the department of economics as far back as my own college days, 1923-1927, yet I was unaware of it; but then I did not tend much toward "economics."

My background and rearing was one dependent upon individual initiative and endeavor; the free enterprise system, if you will, that has made America what it is today. Today I still believe in this basic philosophy and need in order to give substance to our future.

I am proud that Harvard produced a man who could overcome the disability of paralysis and become President just as I am proud that the Catholic son of a self-made man could become President. But, I am not proud that they came out of Harvard with a socialistic philosophy of taking from those who are able to succeed and support our economy in order to give to those who believe that the world owes them a living. I am proud of Nathan Pusey and those poets, scientists, authors, and men of business upon whom this nation must rely to keep us strong.

There can be no doubt that in quite a few of our University Medical Schools organized medicine has tried to get a "spot" on the curriculum to present medicine's views concerning Ethics and Socio-economic problems without success, yet somehow the full-time ultraliberal finds a place on the "Playbill." Some universities have

banned as "off limits" certain private clubs which discriminate in membership. I am sure there are many private clubs in which you and I could not obtain membership — provided we sought it.

You ask if I have read several other books relative to the Keynes philosophy. I only wish I could have found the time, but will make every effort to do so in the future although, as you must know, reading is very difficult to keep up with in this profession which requires a full knowledge of our subject and full day's work.

In spite of Dr. Pusey's words that "The Harvard Corporation has stated that Harvard wants no one who has given up his conscience to Communist discipline," you must admit there have been some very questionable characters who have been in a position to direct the thinking of the formative mind along these lines. This was well publicized at one time. My point is — are these men the ones who help direct this same formative mind along less liberal channels? Are there any who believe that consolidated power is dangerous and that local problems should be amenable to local solutions? Are there any that teach that man must look to his own strength, and expect others to look to theirs? Are there any that show that throughout history "Splinted" men and "Splinted" nations have sunk into dependency and extermination?

It has been authoritatively shown that the Liberalist becomes the ultra Liberalist, and then the Socialist, and finally the Communist; and herein lies our greatest danger. Let us not turn a deaf ear.

God help us to decide just what this country wants:

Conservatism or Liberalism

With one we live; with the other we die.

Thank you, sir, for your interest.

JOHN S. DONALDSON, '31
Pittsburgh, Penn.

Freedom of Thought and the SAMA

Dr. Donaldson's letters of concern and Dr. Berry's clear answer to his first one emphasize that there is a difference between leaning to "the left" and simply allowing a medical student his freedom of thought and his freedom to choose.

The human instinct to herd is strong. By herding, the majority can mobilize a medium through which it may express its beliefs and needs. By herding, we gain enough strength of action to get things accomplished, but we lose individuality in the process. The SAMA was born in 1950 as a self-determining body under the guidance of the house of delegates of the American Medical Association. Dr. G. Lombard Kelly, secretary of the AMA's Council on Medical Service, wrote in 1950:

During my tenure with the Council, I became convinced that the organization known as the Association of Internes and Medical Students (AIMS) which published a very leftish periodical known as *The Interne*, and had chapters in about twelve medical schools, was an evil influence among the medical students of this country. I had suspected its commu-

nist leanings from the start and would not permit a chapter in our school (though in truth there was no desire for one at any time). On the basis of my convictions, I began attempts to sell my Council on the idea of organizing an association of medical students as a junior organization within the framework of the American Medical Association. I wrote a tentative constitution and by-laws modelled after that of the AMA and called the proposed organization the American Medical Students Association.

Since its birth, the SAMA has grown in size and vigor. It now comprises students from 77 medical schools, amounting to over 50,000 individuals. In the 13 years since its organization, the SAMA has established a loans association, a term insurance program, a malpractice insurance program, and a sickness disability program. It has become interested in promoting international student exchanges. It has attempted to clarify varying views of medical care for the aged.

In the early days of the SAMA, Dr. Joseph Garland, editor of the *New England Journal of Medicine*, wrote the following paragraphs:

The principal objectives of the Student American Medical Association — developed under and guided by the experienced hand of the American Medical Association — are to indoctrinate students early in their novitiate in the ethical standards and the internal and external relations of their profession, and to interest them in the organizational means through which these relations are intended to achieve uniformity.

One danger inherent in an organization so developed will, of course, be assiduously avoided — that of excessive paternalism. These young men, so soon to become the independently thinking physicians of the country, may have certain patterns of thought and action demonstrated to them, but also they will be encouraged to view medicine and its problems through their own eyes. No generation has done so well in its conduct of the world's affairs that it dare recommend its own methods to its successors; all it can do is to point to its achievements and warn against its failures. Thought provocation is one thing, but thought control, of which there has been far too much in the last 20,000 years, is another.

The generation in action can only implore the one in training to guard the freedom of the future and perpetuate as few as may be of the errors of the past. It is a charge on today's leaders that the younger men who accept their guidance shall be left free to develop their own opinions and shall be protected against the risk of being suckled in any creeds of unrevised traditionalism.

Harvard Medical School's students have not seen fit to join the SAMA — and this thoughtful decision has been their own. Each year within the structure of the Medical School's course in preventive medicine, representatives of the AMA and representatives of the government come to give lectures on social medicine and social economics to these students. It appears, in fact, that the student body has been adequately alerted to the advantages and disadvantages of setting up a local organization representing the SAMA, and yet they continue to decline admission to the association.

Harvard's superb loan and fellowship facilities make it unnecessary for its students to seek loans elsewhere. Many of the other lesser programs of the SAMA have little appeal to the student body at this phase in its development. Interest in malpractice, life, sickness and malpractice insurance as offered through the SAMA seems not to exist within the undergraduate body.

But more than this, Harvard students are apparently not yet ready to join any herd, let alone that of the SAMA. Perhaps they envisage that by joining the herd they will lose some of the individual freedom that they deem so precious, and that soon enough they will be spirited away. It is impossible to evaluate with complete accuracy the feelings of any group of 500 unherded medical students; but it is quite likely that the reason Harvard's medical students have not seen fit to join the SAMA is, as Dr. Garland stated, they wish "to be left free to develop their own opinions and be protected against the risk of being suckled in any creeds of unrevised traditionalism."

J.R.B.



THE PHYSICIAN BECOMES A PATIENT

by Reed Harwood '34

My wife and I were involved in an automobile accident seven years ago. It nearly cost us our lives, and it caused a surprising stir in our community. The details of our recovery are fairly well known, at least around Boston. But very few people know about my personal experience during the first few hours in the hospital. I offer this account of it for whatever it may be worth, and by way of a salute to my friends at Harvard for their prompt and wonderful response that evening. I particularly wish to acknowledge our debt to St. Elizabeth's Hospital for its generosity in opening its doors to a small army of outside doctors.

My memories of that night are extraordinarily vivid but (I realize now) quite fragmentary. For example, I do not recall the trip to the x-ray room, or the transfusions;* I cannot remember my screams of pain, nor indeed any pain whatever. This story attempts to recreate the events just as I remember them.

* * *

I was roused from a state of unconsciousness when someone started manipulating my legs. I opened my eyes, and dimly took in the ceiling, the drab, bare walls, and a group of uniformed people gathered at the far end of the table on which I lay. Someone was muttering, "Easy now, take it easy — careful — there!" I must have groaned or moved an arm, because one of them came to lean over my face and say reassuringly, "It's all right, sir, we're just taking off your trousers. You've been in an accident." I felt dazed and helpless, caught in a rush of events beyond my control. It was a little like the sensations one has while emerging from ether anesthesia. All this seemed to be happening to some other person, not

*Aufranc, O.E., Jones, W.N. and Harris, W.H., "Fracture of the Month — No. 37. Bilateral Femoral Shaft Fractures." *JAMA*, 185:309-313, 1963.

Reed Harwood '34 who is associate physician in general medicine at the Massachusetts General Hospital, Boston, has written this moving article as a tribute to the hospitals and all his friends who aided in his recovery. The editor includes this article without revision, cognizant of the extremely personal nature of its subject and presentation, but impressed withal by the fact that it represents a rare and almost classical description of one man's reactions to a serious illness.

myself. And yet I could grasp a little of its significance. The bare walls, the unadorned bed, the uniforms of interns and nurses, the familiar antiseptic smell of the room, the echo of footsteps on paved floors — all these identified for me the accident room. My prostrate position and the crowd around me informed me that I was the patient. I perceived also that there was in the room an air of hushed urgency which suggested something out of the ordinary. And in the background, I saw several women in nun's habits hurrying in and out. It was all strange, and very remote. I think I closed my eyes.

When next I opened them, a young doctor was leaning over me. He was neatly dressed and wore rather heavy tortoise-shell glasses. I sensed in him a calm competence and compassion.

"Hello, doctor," he said. "You've had an accident. You're in the emergency ward of St. Elizabeth's Hospital. My name is Dr. Mulroy." It flashed through my mind that I would have greatly preferred to find myself in the E.W. of the M.G.H., but what I said was:

"What sort of an accident?" and I noticed that I delivered the words with some difficulty.

"A head-on car collision," he said. "You have fractures of both femurs." Automatically, I raised my head a little and surveyed my bared legs. Both of them were foreshortened and deformed; the feet were unnaturally everted. There was a break in the skin in the left mid-thigh, and a hole (such as might have been made by a .45 calibre bullet) from which oozed a small trickle of blood. I turned my face from the ugly sight, and sought reassurance from Dr. Mulroy's eyes.

"Yes," he said, "That's a compound fracture, and it must be operated on as soon as possible." There was a pause. I began to sense that I was in trouble. He went on: "We know you are Dr. Harwood, that you are on the staff at the Massachusetts General. Is there any particular orthopedic surgeon you would like us to call?"

I knew there must be, but suddenly I could not think of the name of a single one. It was embarrassing, like being caught in an oral examination with an unexpected question. I *must* know someone. I thought, and just then I had a visual image of my office building, Smith-Petersen's building. Only Dr. Smith-Petersen was dead. Someone had taken his place, I knew, a classmate, and, struggling for the name, I finally found it.

"How about Otto Aufranc?" I asked him. Again I noted the difficulty with my speech, the words did not come out quite right. But he appeared not to notice, merely nodding as he said, "An excellent choice. I'll call him." I settled back, relieved. Somehow the oral exam was over, I had passed it, things were beginning to move.

"By the way —" it was Dr. Mulroy's voice again: "Have you been drinking tonight? The police are here," he went on calmly, "and they want to talk with you."

His question and his statement had an electrifying effect on me; I was suddenly fully conscious, alert. And dismayed. There was more to this accident than a couple of broken legs. And the worst of it was, I had not the faintest recollection of the collision and of what had transpired before it. Of course I might have had some drinks, and if so, I might be in *real* trouble. For the first time it occurred to me that others might have been involved in the accident. My slurred speech must have prompted his question. (My speech never gets slurred.) I was back in the oral examination again, and I didn't have the answers. The police were outside, a lurking menace, and I *had* to remember. I groped for clues.

"Where did you say I am?"

"St. Elizabeth's Hospital."

"And the accident — where did it happen?"

"Right near here, Chestnut Hill Avenue."

I struggled with this information, desperately trying to clear up one point. Chestnut Hill Avenue. . . . Brighton. . . . The blue light outside the police station at the foot of the hill. . . . Ah, I had it now, it came to me with a surge of relief. I cried out:

"I remember now. We went to the early movie, and were on our way home for supper. We had not been drinking!" The relief was short-lived, replaced by the sudden fearful dread implicit in my use of the plural pronoun.

"My wife — is she hurt?" But I knew the answer from the change in his facial expression, a sudden sobering of his look. Fear clutched at me for the first time.

"Yes. She is unconscious" was all that he said.

It was bad enough, unbearable. But worse still, I became aware then of the activity outside my cubicle or room. The hushed urgency of the place took on more

significance. I listened to the voices outside and could distinguish, above these sounds, the stertorous breathing of someone there. It had an ominous quality to it, all too familiar to a physician. Was it my wife, dying there in the next room, or some other person involved in my collision? And supposing that collision had been my fault?

Dr. Mulroy's voice again. "We have called a neurosurgeon to see her, Dr. William Sweet. I hope that is all right with you." I nodded. Another classmate, by chance. The doctor went on: "Is there anyone in your family you'd like us to call?"

Again, a sinking feeling as I thought of my home and realized that our youngest daughter Lynne, aged 12, was there alone waiting for us to return.

"Yes, get my brother Sydney. He lives in Worcester. His number is Pleasant 3-7633." I remember feeling surprised and not a little pleased that the seldom-used number came so readily to mind.

Looking back now, trying to recapture the emotions I experienced that night, it occurs to me that my response to the news of Faith's injury was not what I might have expected of myself. I was appalled and frightened at first, yes, but I did not dwell on her plight. I know now that I was in a state of traumatic shock, and I suspect that I had been given morphine — these may have blunted the sharpness of my reactions. I was beginning to worry, too, about my own brain injury, the dysarthria.

I was alone in the cubicle for a while, and staring at the wall beyond my feet I noticed before my eyes a semicircle of jagged scintillating lights which moved wherever my eyes moved. The semicircle was well outside the center of vision and was present with either eye closed. I thought: this is a strange time indeed to be having an attack of migraine. I thought: I'll do a neurological exam right now.

My neck was not stiff, and I could find no lumps on my skull, but my hand encountered a blood-soaked bandage on my forehead. My head ached mildly. It was easy to demonstrate the absence of any gross visual field defect, or any double vision on full range of ocular motion. Facial sensation was intact except for a small area of numbness somewhere on my lips. I found that I could not whistle and that my tongue seemed clumsy — I could not wiggle it back and forth properly. I could

perform normally such acts as rapid supination and pronation of my hands, and successive opposition of thumb with the other four fingertips of each hand. There was no numbness of either side of my abdomen or upper thighs. The main difficulty was in phonation — I experimented with various sounds and discovered that my voice had a peculiar throaty quality and that I had the most trouble with “k”, “t”, “v” and “r”. A long “e” required great effort, and even then did not come out quite right. My first name was particularly difficult to say. On the basis of these findings I concluded that my injury was confined to an extremely small area of the cerebral cortex.

Franny Moore was the first of my friends to arrive. He was solemn enough, I thought, but he managed to give me a sense of his strength and his full support. He told me that my brother Sydney had called him. Franny had then gone to my house, picked up Lynne and her dog (she behaved marvelously, he reported), and bedded her down at his own house before coming to St. Elizabeth’s Hospital. He told me of the head-on collision I had had with a boy who was passing on a curve. It seemed that the police wanted any information I could give about this reckless act, but Franny and Dr. Mulroy had put them off.

Otto Aufranc appeared soon after, and with him his hastily mobilized team. I do not recall much of what he said, except that an operation that night was imperative. I asked him about Faith.

“It’s bad, isn’t it?” I said. He nodded.

“Bad, Reed — real bad. Bill Sweet is examining her now.” I knew what he meant to convey. The stertorous breathing was still plainly audible in the next cubicle.

Bill Sweet appeared. As I recall, he seemed less pessimistic about Faith than Otto had been. I told him of my neurological findings. He asked me a few questions and then in his usual swift and expert way made his own examination. He was reassuring about the extent of the damage. I considered asking him whether the lesion was likely to *stay* small, even during major surgery, but refrained. What would have been the use?

Soon Sydney came. He was very pale and even more solemn than the rest; I could see what an effort it cost him just to stand there looking at me. He walked beside my stretcher as I was wheeled to the elevator and the

operating room. I realized with some regret that I might never see him again. The thought should have made me afraid, but to my surprise it did not. I was quite ready for whatever was to come. I said good-bye to Syd at the door to the operating room and heard his choked “good luck” in reply.

* * *

It was a sharp, biting pain in my left elbow that brought me back to consciousness. The light was streaming in through a large bedroom window, a grey Sunday morning. The bed and its frame were festooned with ropes and pulleys. A crowd of doctors was present, watching me. Another jab of pain in the elbow caused me to cry out “What the hell!” in anger.

“I am just suturing a laceration we overlooked last night.” It was Otto Aufranc’s voice. I turned to regard him; he looked very, very tired. The others looked tired, too — young Smith-Pete and Bill Cochran among them; they were fussing with some gadget at the foot of the bed. It came to me then that I was alive, I had made it, and I experienced a sudden wild surge of joy. It was followed almost immediately by the sobering recollection of my wife’s condition. I asked Otto.

“She is still unconscious, but possibly a little better — her breathing is improved,” he told me.

And so began the long road back for us both. I returned to my practice — part time anyway — exactly one year later; and Faith was by then quite active in the household.** The process of rehabilitation continued for several years more. I learned a great deal during this long convalescence, learned something more about the meaning of love and of friendship; something more, too, about the capacity of doctors and nurses to be kind and thoughtful beyond the call of mere duty — and of what this can mean to the patient. I came to understand better the character of my children by observing their individual reactions to our calamity. I found that rehabilitation requires determination and patience. And I suspect that if I could *fully apply* the lessons learned, I might almost believe that the whole experience had been worth while.

**The reader will appreciate that I cannot relate here the details of my wife’s more serious illness, her stormy hospital course, and her eventual miraculous recovery.



This is Cartegna, one of the many never-never lands outside of Colombian cities where migrants from country to city settle before moving into better quarters. A "suburb" of Cali, it served as one of the expedition's classrooms.



Below, Michael Roath and Douglas Stewart '65 work in their laboratory in Medellin. At the left is Richard Loescher '65 at the Facultad de Medicina, Cali.



Expedition to Colombia:

A Peripatetic Course in Nutrition

by Joseph J. Vitale

I suspect most people concerned with medical education would agree that the teaching of nutrition is deficient in many medical schools. In pathology and biochemistry courses at Harvard, for example, the few lectures on nutrition usually deal with problems that no longer exist in our own country, only causing the student to look upon the subject as a rather dull discipline, void of the excitement of a "red hot" carcinoma or leukemia.

The reader is surely aware of the relationship of nutrition to medical problems and thereby to the basic sciences biochemistry, physiology, pathology, pharmacology and others. The medical student seems well informed about "active transport," could probably adequately discuss the effects of quinidine or transmembrane potentials, and is likely quite knowledgeable about "adaptive enzymes." However, his knowledge of the nutritional implications or factors associated with various chronic diseases seems disproportionately incomplete. This is indeed distressing, particularly when nutrition is becoming increasingly recognized as an important variable in the treatment and prevention of major chronic diseases.

Even though nutrition is touched upon throughout the four years of medical education, it is seldom coordinated so as to present its basic or applied concepts in an organized fashion. How many fourth year students can write out dietary orders for a diabetic, an obese patient, a patient suspected of having coronary disease, a patient with hypertension, a child with malabsorption syndrome, any one of many surgical patients, or for patients with any of a host of other illnesses that require some type of dietary management? If the student is not

even fully aware of the cause and effect relationships between poor nutrition and disease, how is it possible to teach even something as basic as this?

Some solutions have been suggested. In 1962, the Council on Foods and Nutrition, at a conference on nutrition teaching in medical schools, recommended that the AMA Council on Medical Education in Hospitals make nutrition in intern and resident training programs one of the criteria of approval, that workshops for the teaching of nutrition in hospitals at the postgraduate level be instituted, and that the Council on Foods and Nutrition itself expand its program of short-term fellowships in clinical nutrition in order to stimulate individuals to pursue careers in nutrition.

A more effective answer, however, may be the students' increased interest in international medicine and public health. This interest has resulted in a new experiment in nutrition education. Made possible through a collaborative program begun in the summer of 1962 by the department of nutrition at Harvard and that at the Facultad de Medicina, Universidad del Valle, Cali, Colombia, South America, the experiment offers an alternative solution to the problem of teaching nutrition to interested medical students.

For many years at Harvard, the department of nutrition has enjoyed cooperative programs with government and academic institutions in several countries. The most recent of its collaborative endeavors, the Cali-Harvard cooperative nutrition project, was initiated by Dr. Leonardo Sinisterra, a former student in the School of Public Health whose major interest was in nutrition. Upon his return to Cali, seeing the need for nutrition education and research in medical education and practice, he joined Dean Gabriel Velasquez of Cali and Dr. F. J. Stare, chairman of the nutrition department at the Harvard School of Public Health, in preparing a request for funds to help establish a department of nutrition at the Facultad de Medicina. Both the Rockefeller and

Dr. Joseph J. Vitale, who is an assistant professor of medicine at the Harvard University School of Public Health, received his S.B. degree from Northeastern in 1947, his S.M. degree from New York University in 1949, and his S.D. degree in hygiene from Harvard in 1951.



These children are eating the Colombian staple, *pañela*, a hard bar of unrefined sugar that has been boiled in water.

Kellogg Foundations committed a sum of money to be expended over three years beginning September 1, 1960, and the Harvard department of nutrition also contributed from its own fund.

Although a relatively young institution (approximately ten years old), the Facultad de Medicina is one of the bright spots on the medical horizon of Latin America. It is staffed by young, competent people. Most of the senior staff, after intern and resident training in their own university, have taken one to several years additional medical training in teaching hospitals, medical schools and medical centers in the United States and in any one of several European countries. The school is well supported by various foundations.

Too many medical schools in Central and South America are overcrowded today. Some accept more than 1,000 students the first year. To schools which are poorly equipped, understaffed, and miserably financed (most of them operate on inadequate funds from the national government or government supported lotteries), these

numbers impose a great stress on teachers and students alike. In addition, the schools accept students who are intellectually and emotionally unprepared for graduate training; the majority of first year students have less education than the graduates of some of our better public high schools. As a result, South American medical education is little more than a quagmire of medical dictums.

These and other problems are appreciated by most medical educators in Latin America, and some institutions are striving to better the system. Aware of these obstacles, the Facultad de Medicina in Cali has never admitted more than 60 students to its first year class, it now advises and encourages additional training abroad for its younger staff, it is presently strengthening and lengthening its undergraduate education, and it is also paying serious attention to the raising of funds from local, non-government sources.

The Cali Facultad de Medicina hopes to become the "Harvard Medical School" of Latin America, but it has not yet attained that distinction. The greatest fear among some Colombians and foreigners is whether it will survive when it begins procuring its own funds, since at present it is receiving non-Colombian financial support. Almost all of the salaries of the Cali faculty are now being supplemented by various U.S. foundations.

The opportunities for seeing "nutrition" in medicine in Cali are excellent, both in the University Hospital and in the neighboring barrios. In our country, malnutrition takes the form of poor dietary habits and too many calories. In the so-called underdeveloped areas, malnutrition takes the form of too few calories, too little high quality protein, and multiple deficiencies of minerals and vitamins. It is complicated further by parasitic, bacterial, and viral infections. There is little doubt in our minds that the poorly nourished individual is more susceptible to infectious diseases. The majority of Colombian families live in poor slum areas, they are overcrowded, and it is not uncommon to find five or six members living in one or two small dirt floor rooms. Water, when available, is usually contaminated with various pathogens; approximately 95 per cent of the Colombian population has one or more intestinal parasites. Go out a mile in any direction from downtown Cali, and you can find these conditions. The laboratory is enormous.

In September, 1960, I took a leave of absence from the HSPH and moved to Cali for 24 months. The purpose of my stay was to help establish a department of nutrition within the medical school, initiate programs in nutrition education, launch nutrition research programs at both experimental and clinical levels, and assist in developing public health and nutrition projects. With the cooperation of various faculty members, a six-bed pediatric metabolic unit for the study of anemias in protein malnutrition was established in the University Hospital. This unit gave impetus to the development of two pre-kwashiorkor units in outlying areas. A course in

clinical nutrition for fourth year medical students was also organized.

It was not until the summer of 1962 that the first representative of Harvard Medical School, William Weiss '64, joined us in Cali. He had spent the previous summer working in nutrition with Dr. Jean Mayer of our department in Boston and had shown interest in public health as well. Dr. Stare provided funds for him to become involved in some of our public health nutrition programs in Cali. In addition to working with us on protein malnourished children in the metabolic unit, he undertook a study of the epidemiology of kwashiorkor.

Weiss' contagious enthusiasm over his summer program, combined with the students' reaction to two exceedingly interesting lectures in nutritional pathology given by Dr. S. B. Andrus of our department, gave impetus to our "experiment" of exposing Harvard Medical students to nutrition and public health. That fall, 23 second year students came to see Dr. Stare and me about participating in a program similar to Mr. Weiss'. In December, we discussed the possibility of sending second year students to Colombia with the faculty members and the deans of two Colombian medical schools, the Facultades de Medicina at Cali and at Medellín. One of my Cali associates, who is now in charge of the seccion de nutricion in the departamento de medicina at Medellín, and my several visits to the school convinced us that

This woman is doing her laundry at one of the few laundering and bathing facilities erected by the Alliance for Progress in some of the poorer areas.



opportunities for work in public health nutrition were as good there as they were in Cali. During the spring of 1963, interviews, conversations, and seminars were arranged between members of our department and the medical students interested in spending the summer in Colombia, in order to obtain some idea of their interests.

In May of 1963, I returned to Colombia to formulate and organize various programs for the students with faculty members of both universities. My planning efforts proved extremely worthwhile. Dr. Stare had meanwhile convinced the Milbank Memorial Foundation of New York and the Council on Foods and Nutrition of the AMA of the value of such an experiment. These institutions provided funds for the travel and subsistence for seven students in Colombia.

The prevalence of goiter in Colombia ranges between 45 and 85 per cent. The question of whether the goiter seen is simply due to iodine deficiency (which it does not appear to be) or to other causes, has been the subject of investigation in the Seccion de Endocrinologia for some time. Richard Loeschner '65 was involved with several aspects of this problem, particularly with the development of a bioassay for thyroid stimulating hormone (TSH) and long acting thyroid stimulator (LATS).

Eugene Rosenberg spent most of his time working in hematology. Protein malnutrition constitutes one of the major health problems in Colombia, and it was the study of the anemias of protein malnutrition that occupied much of his efforts. In addition to following the hematological changes in malnourished children being treated in the University Hospital, he also initiated some experiments using rats, in which the interrelationships between protein and/or iron deficiency on blood formation was studied.

Mark Stiglitz combined parasitology and hematology. His summer project was to evaluate the relationship between the presence or absence of hookworm (*Necator Americanus*) infestation and anemia. It is well known that hookworm infestation results in an iron deficiency anemia, and it is generally accepted that a fairly good correlation exists between the degree of infestation and the severity of the anemia. If, however, you remove a patient from an area in which he is likely to become reinfested or be continually infested to one where reinfestation is not possible, you may well find a persistent hypochromic anemia in the absence of significant amounts of hookworm eggs in the feces. Stiglitz helped undertake hematological and parasitological studies in an urban population with poor nutritional status that has low levels of hookworm infestation but which is infected with other species of intestinal parasites.

In Medellín, Douglas Stewart and Michael Roath worked on somewhat related programs which dealt with the quantitative and qualitative relationships between malnutrition and parasitic infestation. Stewart was involved principally with work in the amebiasis unit, while



Every Sunday these "parks" are filled by those who can afford to buy beer and some extra food. The stands are selling yucca, sausage, tripe, fried potatoes, and cooked plantano, a vegetable that resembles a banana.

Roath was principally involved in programs of the department of preventive medicine. In view of what has been said of the average medical student's inability to prescribe good diets, I was struck by the first sentence of Michael Roath's report which read: "Realistically speaking, the Colombian's major medical problem is derived from the socio-economic situation of the country. A large per cent of the population lack the income to afford an adequate diet and lack the knowledge to improve their present diet by proper selection."

The other student in Medellín was Jeffrey Riker, who worked within the department of nutrition and anatomy of the Medical School. He was principally concerned with the morphological alterations of the intestinal mucosa and bone marrow of patients with malabsorption syndrome and/or parasitosis. Such patients are usually protein as well as folate deficient.

The facilities for carrying out the necessary laboratory analyses involved in these problems are quite adequate at both universities. Much of the equipment and facilities in several of the laboratories are as adequate as those in the medical schools and hospitals in Boston.

As expected the program was not free of problems. The students were continually frustrated by their insufficient knowledge of Spanish. Undoubtedly, this problem will always be present to a varying degree, but it neither negates continuation of the program nor does it mar the student's willingness to "do it all over again."

The students were also concerned about the lack of time or opportunity to write a paper worthy of publication in one of the better medical journals. I think this is

a compulsive attitude imposed upon the student by us, the faculty, and it should be discouraged. As one medical student put it, "We are *Harvard* students," implying of course that there was little I could do to prevent them from trying the impossible. Upon our arrival in Cali and Medellín, the faculty and I stressed the point to the students that this was an addendum to their two years of medical school; it was a "course." The vital question to be asked upon its completion was not "what did you accomplish?", but "what did you learn?" No one would ask a second year medical student what he "accomplished" in biochemistry or anatomy, nor could anyone ask whether the biochemistry or anatomy learned will serve him in later years.

The students learned a great deal. They learned something of the culture and mores of a country undergoing tremendous change, and they became aware of the problems of a so-called "rapidly expanding economy." Most important, they came away with some knowledge of the health problems of such an economy and of the minor role that the physician will continue to play in public health or preventive medicine, until economic, legal, agrarian and similar reforms are instituted.

The problems of the "underdeveloped areas" are really quite similar to the problems of "rapidly expanding economies." In Colombia, as in many other countries, the tremendous migration of people from rural to urban areas creates much the same situation that this country faced in the late 19th and early 20th century. With this migration came problems of housing, education, medical care, sanitation, availability of consumer goods, food

supplies and a multitude of others which all affect the health and welfare of whole communities. While many people may find themselves with more pesos in their pocket, the majority find themselves in an even more "underdeveloped" area. Cali, the third largest city in Colombia, had approximately 100,000 citizens 25 years ago; today it has a population of close to 750,000 inhabitants.

We probably know more about nutrition and infectious disease than many of the other medical disciplines and yet, ironically, it is malnutrition coupled with infectious disease that kills anywhere from 45% to 55% of Colombian pre-school children and incapacitates many others. The health problems are not going to be solved by medical men alone, but in cooperation with engineers, architects, lawyers, economists, educators, politicians, and the above-average income citizenry. There are large segments of the population who are making honest efforts to remedy some of the problems; principally through legislation or by campaigning for agrarian and similar reforms. Whether these changes or reforms designed to upgrade human life will be made in time to prevent revolution and chaos remains to be seen.

These people and many others throughout the world have become aware that poverty, disease, malnutrition, and misery need not be their fate. The poorest peasant is likely to have a transistorized radio, and he now knows that people can and do live better, that one out of every two children born need not die, that there is sufficient food available to feed him and his family, that there is a need for agrarian reform, that there are drugs that might well have saved his wife, son, or relative, and that there are ordinary people like him doing the same job earning ten to 100 times more than he is now being paid by his "patrone."

In this age full of specialists, the challenge to the

physician in international medicine and public health is a great one; not only must he learn and practice his own profession, but he must be able intelligently to incorporate his own activities into a host of others. The students illustrated these points by such comments as: "Public health problems in Cali, Colombia, as I learned this summer, are vast and complex, involving more than the medical concepts described in the textbooks," or "I came away with a feeling for the great complexity of factors that have caused the health problems of countries like Colombia and a more realistic idea of the role that public health agencies and individual personnel can play." Lastly, they have come to "have a better understanding and greater appreciation of the nutritional implication of many disease states."

Second year students in particular should have an opportunity to work in areas like Cali or Medellín, for they will have additional opportunities to return in their third and fourth years. A "breaking in period" seems necessary; it gives the returning student a chance to reassess and better cope with much of the clinical material that he did not understand on his first visit. Dr. Newell, a professor at Tulane's department of preventive medicine who led a similar program in Cali, agrees.

Our program does not entirely answer the questions I have raised, but I and my South American colleagues believe it is a significant step forward. Indeed, there is not only a need for more nutrition education in medicine, but also for physicians interested in the nutritional problems that affect two-thirds of the world's population, those of the underdeveloped areas or in the "rapidly expanding economies." It is hoped that programs of this sort will not only encourage future physicians to enter the field of nutrition, but perhaps to enter the field of international public health.

As this picture shows, Cali is a city of extremes; the house in the foreground and the skyscrapers that dot the horizon behind both mark its "rapidly developing economy."



WALTER BAUER

1898-1963



Photo by Dave Lawlor

Portrait by Pietro Pezzati

Walter Bauer, medical chief at the Massachusetts General Hospital, died at that hospital on December 2nd, 1963, at the age of 65, after a long and trying illness. He had had a distinguished career and was known the world over for his accomplishments in his field, the etiology, pathogenesis, diagnosis, and treatment of diseases of the joints, and related problems.

Bauer was born June 7, 1898, in Crystal Falls, Michigan. Both of his parents were south German Lutherans, who had come from Württemberg, southwest Germany.

Quite early in life, Bauer developed an interest in medicine. He went to the University of Michigan, where he earned his B.S. degree in 1920 and his M.D. in 1922. He then took an internship and assistant-residency in medicine at the Long Island College Hospital, Brooklyn, N.Y. In 1924 he became a resident in medicine at the Massachusetts General Hospital and thus began an association with Harvard and the MGH which was to last for almost forty years.

When Bauer began work at the MGH, the new research ward four

had just been completed. Dean Edsall had set up a project study of lead poisoning at the Medical School, at the behest of the lead industries, with Dr. Joseph C. Aub as director of its clinical aspects in this ward. Aub proposed that Bauer join this group, which he did, continuing with it for several years, until he branched out on projects more nearly his own.

In 1927-28, Bauer was awarded a National Research Council Fellowship, which he used for a year's work with Sir Henry Dale at the University College Hospital Medical School in London. That year he received his basic training in the theory and technology of medical research which was vastly important to him during the rest of his career. He also formed such a warm friendship with Dale that he named his son, Walter Dale Bauer.

In the early 1920's, a fund had been raised at the Medical School as a memorial to the distinguished Boston orthopedic surgeon, Robert W. Lovett; this was used to support a comprehensive and long range study of crippling diseases, which later became known as the "arthritis studies." Chairman of the Lovett Fund Committee, Cecil K. Drinker, induced Bauer to head the studies. This was a momentous and happy decision for Bauer because it determined the direction of the balance of his career.

Almost at once, Bauer began recruiting a research team on which many disciplines were represented. On the experimental side, studies were begun on the physiology of the joints of animals. The effects of aging and ordinary wear and tear, as well as the more specialized types of injury were thoroughly investigated. All the component parts of joints, cartilages, synovial mem-

branes, capsules of joints, adjacent bony structures, blood, lymphatic vessels, and synovial fluid came up for study by the combined methods of anatomy, cytology, physiology, and biochemistry. It is doubtful if such a comprehensive approach to fundamental arthrology had ever before been attempted, and it was one of Bauer's major accomplishments.

The Lovett Fund was the first of several funds which in combination proved to be a bonanza for the promotion of clinical research at Harvard and the MGH. One of the reasons for such abundance was that Bauer never hesitated to ask for anything he wanted, be it money, space, or time, and when he asked for anything, he always flashed his radiant and endearing smile, which was very hard to resist. Indeed, he was a natural-born money raiser.

Between the launching of the arthritis studies and the entry of the United States into World War II, Bauer was engaged in intense and sustained activity in many directions. In addition to his leadership of the arthritis group, he had the usual commitments of the full time academic physician, teaching assignments, private practice, and extensive travelling to meetings.

His accomplishments were all the more remarkable, because, as time went on, he became handicapped by marked variations in his capacity to handle his work load. For months at a time he had what seemed a superhuman capacity for work, only to be relatively slowed down for several months afterward.

Bauer was a good teacher. He was best with small groups, around a bed or a conference table. Personal contacts, man-to-man relationships were very dear to him. He had great

personal magnetism. Honesty and humility were two of his outstanding characteristics. To quote Kipling, "An 'e learns to make men like 'im so they'll learn to like their work."

From 1942-45, he held the rank of colonel in the U.S. Army Medical Corps and was assigned to the Eighth Service Command in Dallas as a consultant in medicine and was put to work developing an education program for medical officers. Characteristically, he threw himself into these assignments with vim and vigor, achieving noteworthy results. By arrangement with Dr. Benjamin Castleman, he had the Cabot-Case Records sent to all medical officers in his area who instituted the local CPC conferences which were very well received.

Toward the end of the war, he was invited to make an extended lecture tour in Scandinavia, speaking on wartime advances in medical research. He was well received, and in recognition, he was awarded the Order of St. Olaf in Norway and made an honorary member of the Danish and Swedish Medical Societies.

In 1951, he became the Jackson Professor of Clinical Medicine and held the post of chief of medical services at the MGH. The medical services were a going concern when he took over, so he could give much attention to other aspects of his professorship. He made a great thing of the death conferences and developed several series of them for different groups of doctors. He also gave a very popular course each spring to graduate-practicing physicians, which was a sort of revival of Richard Cabot's old graduate course. Bauer gave it in a high spirited way, with brisk quizzing.

When Bauer took over, there were already in operation a number of what he called "units." Organized to facilitate the study of disease processes and the patients' ills, these were composed of men of various disciplines, each of whom applied himself to a special aspect of one particular problem. Although the system of groups antedated Bauer, he

perfected it more highly than any of his predecessors. He paid close attention to the selection of their leaders, increased the number of biochemists in them, and saw to it that the clinicians in the units had adequate opportunity to exercise their talents in a wholesomely wide area. In his graduate course, he had the chiefs of units make presentations by turns. This developed a rivalry that Bauer used as a measure of their right to promotion — a little stroke of genius.

He also utilized his private practice as an instrument for teaching. Although full time men are supposed to restrict their private practices to somewhat modest dimensions, Bauer made such good educational use of his that no harm resulted from its large size. He was a very dedicated practitioner, visiting his patients with great regularity, and being ever available to them. Arthritis patients were only a small proportion of his total private patients who provided diagnostic puzzles of all sorts. His practice became a new pattern for a private teaching clinic.

Educationally, he made another contribution. He established a position to help him care for these patients — "assistant to Dr. Bauer," it was called. This unique and much desired job was usually given to a

former resident at the MGH. An MGH and HMS title was secured for such men, and they were paid a good salary by Dr. Bauer himself. His honors and membership in learned societies are too numerous to list. In 1959, however, he was president of the Association of American Physicians, to which he had belonged since 1935.

The end of the story is one of black tragedy. He spent his last year as a patient himself in the hospital suffering from a progressive pulmonary disease which gradually reduced his breathing capacity. It was a hideous process, which went on month after month, although he bore it all with amazing fortitude. Indeed, he summoned all and sundry to his bedside and tried to keep his hand on the medical service until the end. It was almost superhuman persistence. Finally, death came to release him.

In summary, Bauer, as the good physician, loved all three functions of medicine, patient care, teaching and research. Of these, however, he loved his patients most. He served them with compassion and devotion. He leaves his mark on both the science and art of medicine.

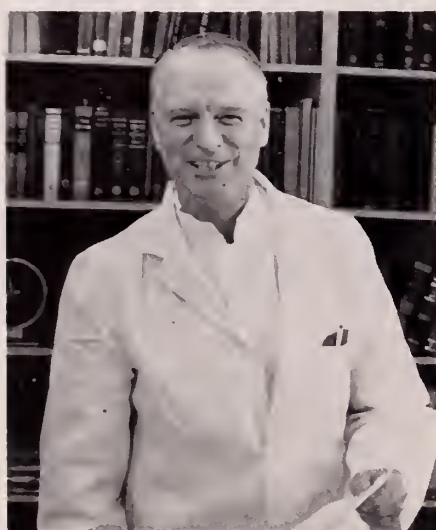
J. HOWARD MEANS '11
Jackson Professor of Clinical
Medicine, Emeritus

While the flag was at half-mast for President Kennedy, a unique situation arose, and for one week the HMS flag was also flown for Dr. Walter Bauer.



HONORS

Two Alumni both recently received the Distinguished Achievement Award from the editors of *Modern Medicine* journal: Dr. Oliver Cope '28, associate professor of surgery and visiting surgeon at the Massachusetts General Hospital, and Dr. Joseph Garland '19, editor of the *New England Journal of Medicine*. Dr. Cope was cited for his contributions to parathyroid surgery and his untiring efforts to break down the barriers between medicine and surgery, physician and patient, and teacher and student. Dr. Garland received his award for his perceptive leadership in establishing and maintaining high standards in medical writing, editing, and advertising.



Dr. Cope

Louis K. Diamond '27, associate professor of pediatrics at the Children's Hospital Medical Center; associate chief, Harvard Medical Service; and hematologist and director of the Blood Bank, CHMC; and Fred H. Allen, Jr., '38, clinical associate professor of pediatrics at Cornell University Medical College and director of laboratories of the New York Blood Center of the Community Blood Council of Greater New York, Inc., have both received the 1963 Karl Landsteiner Memorial Award of the American Association of Blood Banks. The Award, consisting of a scroll and \$1,000, was conferred upon these outstanding hematologists for the part they played in developing the exchange-transfusion technique for the treatment of infants born to mothers with incompatible blood. The award was established as a memorial to Karl Landsteiner, discoverer of the A, B, and O blood types and Nobel Prize winner.



Dr. Diamond

For his role "as the inciter and catalyst to modern endocrine studies of tumor control in animals and men," Charles B. Huggins '24, professor of surgery and director of Ben May Laboratory for Cancer Research at the University of Chicago, was co-winner of the 1963 Lasker Medical Research Awards.



Dr. Huggins

The National Aeronautics and Space Administration has appointed William R. Lovelace 2d, '34, as a consultant to Dr. George E. Mueller, associate administrator for manned space flight, on the medical aspects of current manned space programs. For more than 25 years, Dr. Lovelace has been vitally engaged in advancing and widening the knowledge of aviation medicine. In 1959, when Dr. Lovelace was chairman of the NASA Life Sciences Committee, he was instrumental in establishing medical qualifications for NASA astronauts. Dr. Lovelace is president of the Lovelace Foundation for Medical Education and Research, in Albuquerque.



Dr. Lovelace

Lamar Soutter '35 has been named dean of the new University of Massachusetts Medical School. Dr. Soutter assumed his new position earlier this month, and will begin recruiting a core faculty who can assist him in formulating program curricula and in making plans for a new medical building. Upon accepting his new appointment, Dr. Soutter said, "The University of Massachusetts . . . has become more of a well-rounded university of which a medical school is an important part . . . Finding the best possible site for the medical school is of primary importance. I have no preconceived ideas on where it should be located. . . ." Dr. Soutter is visiting surgeon and chairman of the committee on teaching at Massachusetts General Hospital.

